UNITED STATES PATENT OFFICE.

JOHN ALLENDER, OF NEW LONDON, CONNECTICUT.

BALANCE FOR DETECTING SPURIOUS COIN.

Specification of Letters Patent No. 13,940, dated November 27, 1855.

To all whom it may concern:

Be it known that I, JOHN ALLENDER, of New London, in the county of New London and State of Connecticut, have invented a new and useful Apparatus for Proving Genuine and Detecting Spurious Coin; and I do hereby declare that the same is described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan. Fig. 2, a section of Fig. 1, cut through the center. Fig. 3, a plan and section of the weight.

The nature of my invention consists in a lever of a proper size and weight, with a fulcrum a proper distance from its center, which lever is provided with cavities in each arm of a proper size to receive the genuine coin arranged at such distances each side of the fulcrum as to weigh the smaller coins upon the lighter arm without additional weight, and the heavy coins two or more on the heavy arm with one weight, in one position, on the lighter arm.

In the accompanying drawings A is the base of a stand provided with two pillars B B which are perforated to receive the pivots *h h* of the weighing lever C, which may be made in the form represented or such other form as may be desirable, the short arm D being made of sufficient weight to weigh a five dollar gold piece if it is placed in the cavity or countersink E which is made just large enough to receive the genuine coin, or the three dollar gold piece in the cavity F, or the two and a half dollar gold piece in the cavity G, or the one dollar gold piece in the cavity H, all of which cavities are in the lighter arm I. These cavities are all made just large enough to receive the genuine coin and it is weighed without additional weight on the heavier arm. The weight J is made in the form represented and provided with a projection K fitted to the cavity H, and when placed in said cavity the lever C will weigh a ten dollar gold piece in the cavity L or a twenty dollar gold piece in the cavity M, each of which cavities are made just large enough to receive the genuine gold coins of the denomination named, and both of them are in the short and heavy arm of the lever C. There is a slot directly across the center of each of the cavities in which the coin is weighed just large enough to let the genuine coin pass through freely by its own weight so as to prove the coin by its size as well as its weight.

This apparatus can be made and sold cheaper than any other that will perform the same service with the same facility, and will be found a perfect protection to prove genuine and detect spurious coins which are either larger or lighter than the genuine.

I am aware that balances for proving coin have been made with two levers hung upon one fulcrum so arranged as to weigh all the coins upon one side of the said fulcrum, and when the larger coins were weighed the lever in which the small ones are weighed is turned to the opposite side of the fulcrum. Therefore I make no claim to instruments constructed with more than one lever and to weigh upon one side of the fulcrum only, but

What I do claim as my invention and desire to secure by Letters Patent, is—

A single lever of such a size and weight and provided with cavities or countersinks arranged at such distances each side of the fulcrum, as to weigh the smaller coins upon the lightest arm, without additional weight, and the larger coins two or more on the heaviest arm with one weight, in one position on the lighter arm.

JOHN ALLENDER.

Witnesses:

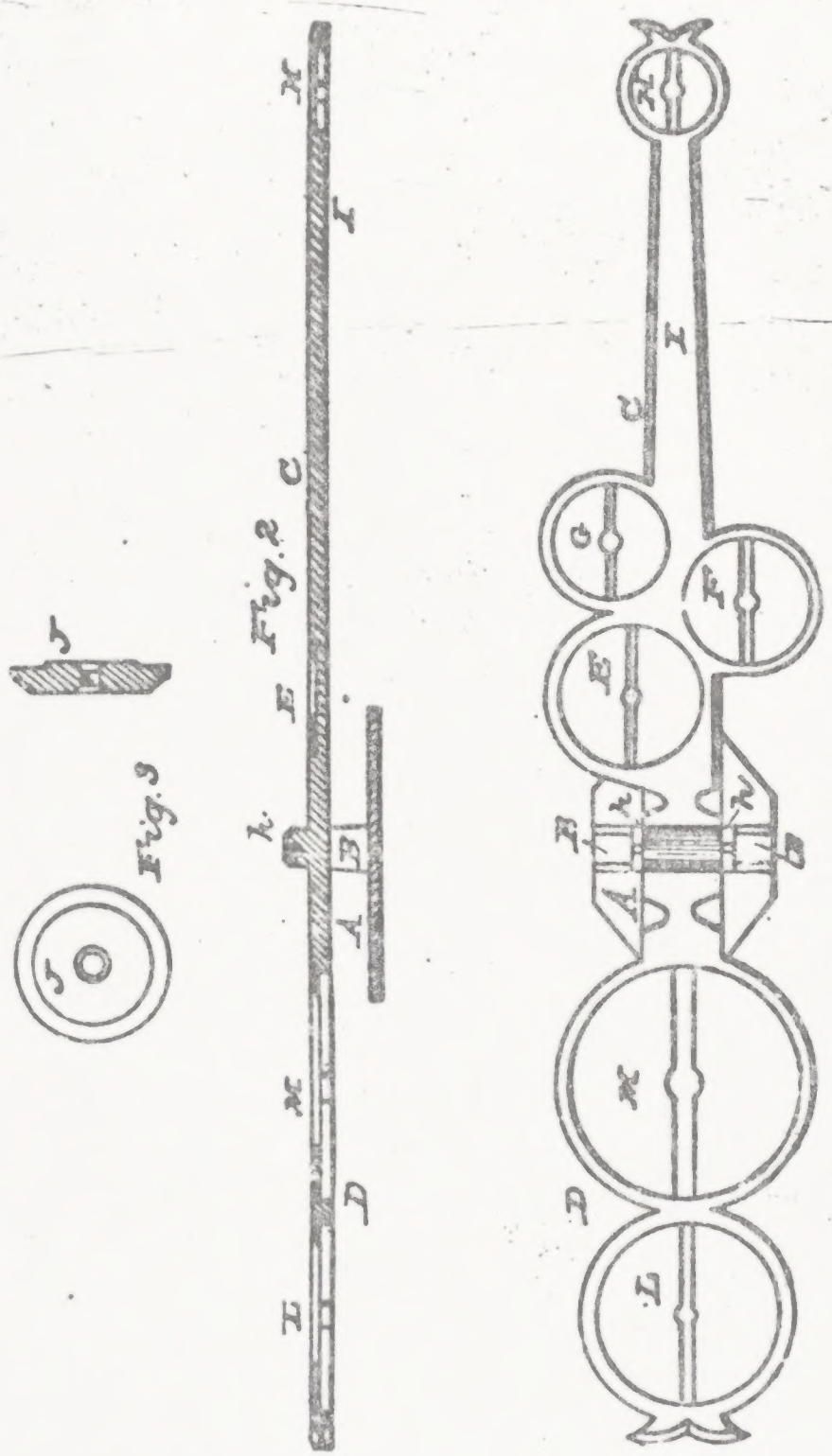
C. PRINCE,

G. C. STILLMAN.

J. ALLENDER.

Coin Tester.

No. 13,840. Patented Nov. 27, 1855.



UNITED STATES PATENT OFFICE.

JOHN ALLENDER, OF NEW LONDON, CONNECTICUT.

BALANCE FOR DETECTING SPURIOUS COIN.

Specification of Letters Patent No. 13,840, dated November 27, 1855.

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In the accompanying drawings A is the base of a stand provided with two pillars B B which are perforated to receive the pivots *h h* of the weighing lever C, which may be made in the form represented or such other form as may be desirable, the short arm D being made of sufficient weight to weigh a five dollar gold piece if it is placed in the cavity or countersink E which is made just large enough to receive the genuine coin, or the three dollar gold piece in the cavity F, or the two and a half dollar gold piece in the cavity G, or the one dollar gold piece in the cavity H, all of which cavities are in the lighter arm I. These cavities are all made just large enough to receive the genuine coin and it is weighed without additional weight on the heavier arm. The weight J is made in the form represented and provided with a projection K fitted to the cavity H, and when placed in said cavity the lever C will weigh a ten dollar gold piece in the cavity L or a twenty dollar gold piece in the cavity M, each of which cavities are made just large enough to receive the genuine gold coins of the denomination named, and both of them are in the short and heavy arm of the lever C. There is a slot directly across the center of each of the cavities in which the coin is weighed just large enough to let the genuine coin pass through freely by its own weight so as to prove the coin by its size as well as its weight.

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What I do claim as my invention and desire to secure by Letters Patent, is—

A single lever of such a size and weight and provided with cavities or countersinks arranged at such distances each side of the fulcrum, as to weigh the smaller coins upon the lightest arm, without additional weight, and the larger coins two or more on the heaviest arm with one weight, in one position on the lighter arm.

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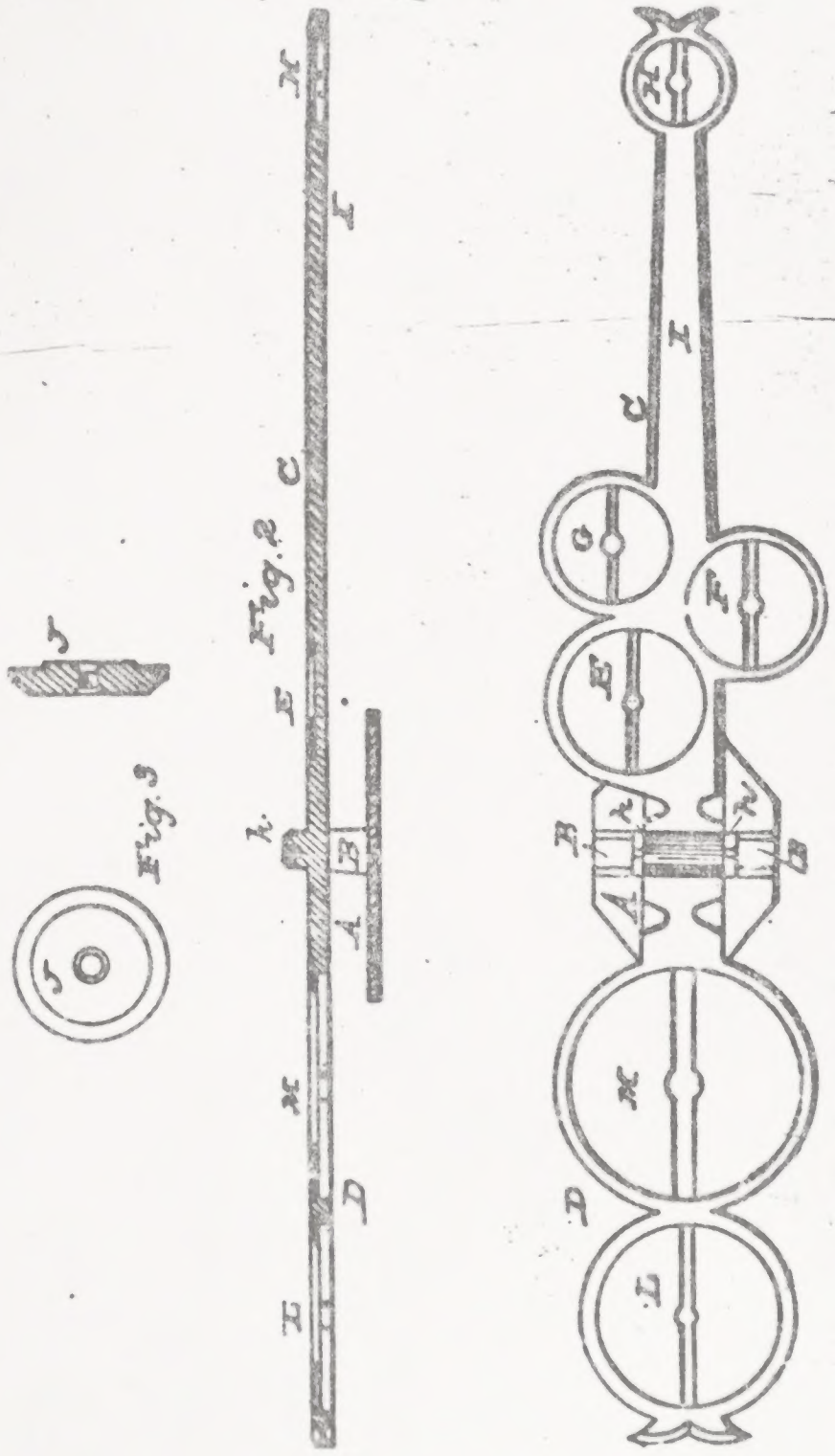

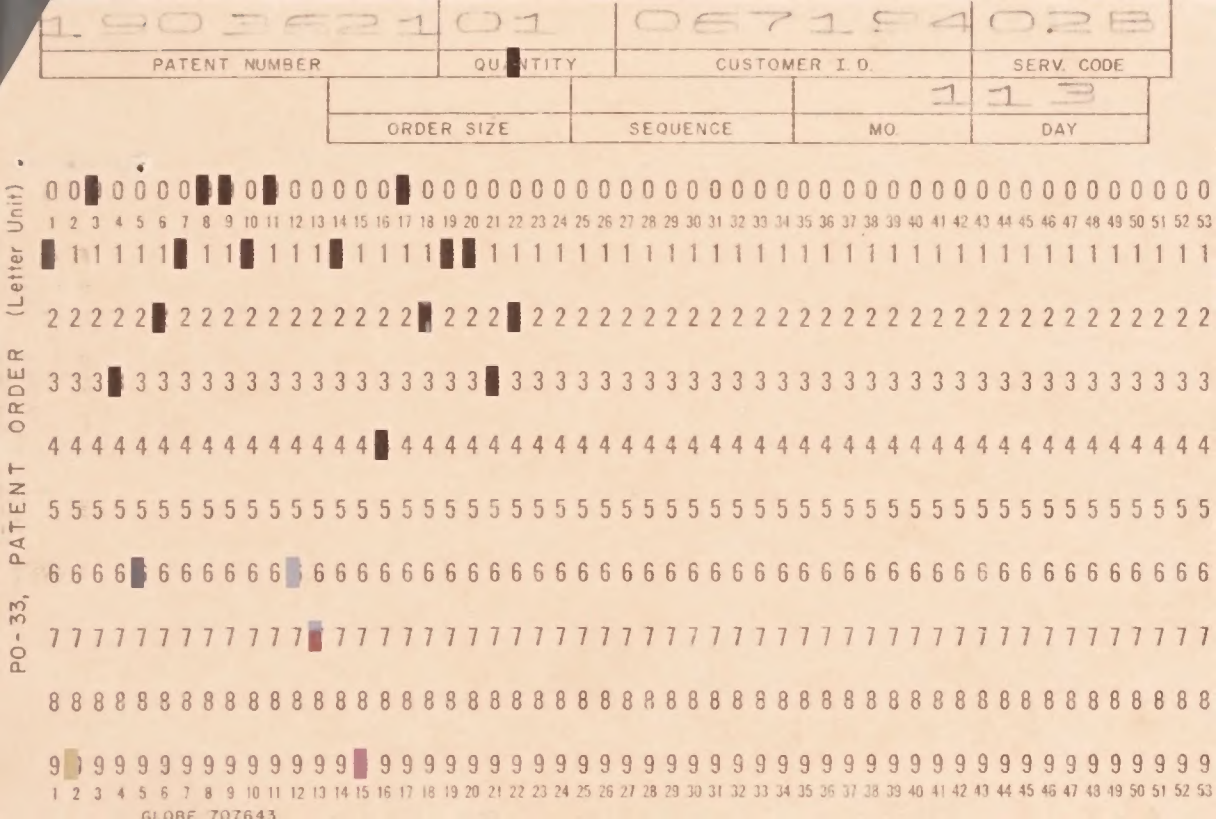
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GLOBE 707643

Patented Apr. 11, 1933 1,903,621

UNITED STATES PATENT OFFICE

FRED E. FINCH, OF READING, PENNSYLVANIA

COUNT CHECKING DEVICE FOR PACKAGED COINS

Application filed May 17, 1930. Serial No. 453,325.

This invention relates to a device for checking the count of coins in the roll packages universally used today in banking and business and is more particularly concerned with a device for checking the accuracy of the count by weight without unpackaging the coins or disturbing the wrapping; and with due compensation for loss in column height or length, and weight by wear, and with the method involved therein.

Determination of accuracy of count by weight is predicated on the known fact that standard roll packages of new coins have definite weight relation; that the maximum wear in the column of coins in all or practically all standard packages will be less than the weight of one coin; and not more than three coins in the case of dimes; and that the loss in column height or length through wear, due to the absorption of more of the thickness wear by the milled beaded edges of coins, as compared to loss in weight, is substantially as four to one; and that shrinkage in length of a roll column of coins through wear from new column thickness to maximum wear thickness can be precalculated for gauging, and accurately compensated for balance.

United States coins are roll packaged in quantities of fifty "dimes," forty "quarters" and twenty half dollars. The United States fixed relative weight standard of its coins, when new, permits proportioned leverage placement of rolls of different coins relative to a pivotal balance line or point of a coin supporting and weighing table or platform and the proportionate loss of weight to height or length in a standard roll or column of worn coins, permits a proportionate adjustment of a counter balancing weight at the opposite sides of the pivotal edge or point to compensate. Where the loss in column height or length compensated by corresponding proportionate adjustment of the counter balancing weight fails to balance and the roll of coins is overbalanced by the weight adjustment, a shortage of count or inclusion of a smaller and lighter coin will be indicated. When balance is not attained with the proportionate counterbalancing adjustment made and the coin roll overbalances the counterweight, an overcount or excess in number of coins will be indicated or the inclusion of a different coin of coincident or smaller size and greater weight. In such cases, the roll package will require opening, examination and count.

A roll or column length (or height) caliper or gauge bar is used for standard coin roll packages of each denomination calibrated to indicate proportionate divisions or fractions of the maximum permissible loss of length in height, with the calibrations extending from a point indicating the full count of new coins to the point indicating the maximum loss of length or height permissible in a full count of worn coins. If the caliper or gauge may be moved appreciably toward the pivotal point, a short count will be immediately indicated, and the device embodies this quick determining means for obvious shortage as one of its features.

The described features of the invention will be more clearly apparent from the following detailed description which is to be read in conjunction with the accompanying drawing forming part thereof and illustrating one form of the device.

In the drawing:—

Figure 1 is a perspective view of a count checking platform balance embodying the features of the present invention.

Figure 2 is a longitudinal vertical section thereof.

Figure 3 is a transverse vertical section on line 3—3 of Figure 2 with the caliper bar shown in cooperative gauging relation to a roll package of coins, in this instance representing "quarters".

Figure 4 is a detail perspective view of the quarters and half dollar caliper bar.

Figure 5 is a detail section of a modification, illustrating a visual indicator hereinafter described.

In the drawing a flat rectangular plate 1 which may be of any suitable material such as wood, cast aluminum etc., is provided midway of its length with a perpendicular traversing rib 2 or any equivalent pivoting means, said rib having its lower edge beveled to a knife edge 3, and providing a transverse

knife edge balance or balance line. 4 indicates a plane surface, such as a bank counter, desk or table top upon which the knife edge balance may rest.

At one side of the balancing edge, I provide the platform, plate scale or balance thus formed with troughs or receptacles for standard packages or rolls of different coins, these seats having abutments designed to engage one end of the coin roll package. Conveniently, such seats may be formed by V-shaped grooves such as the grooves 5 and 6 shown in Figs. 1 and 2, cut or cast in the top face of the plate 1 with the plate of one end of the groove forming abutments 7 for one end of the coin roll packages seating therein and, since it is desired, in accordance with my invention, to measure the length of the coin column within these packages I provide the end abutment walls 7 with inwardly facing pointed contact studs 8 of predetermined length which will penetrate the material of the coin package and engage the coin at one end of its coin column, thus making it unnecessary to disturb the wrapper of the package.

In order to provide a gauge for determining the loss of weight by wear for a full count of coins of each denomination proportioned to their loss of column length by wear, I have established by experimentation the length of the coin columns of full count packages of coins of different denominations and the maximum loss in length of full count coin columns of the same denominations through maximum permissible wear, and have determined by experiment and calculation that such coin columns lose weight in proportion to loss in column length in the ratio of approximately one to four.

The official standard weight of new United States coins makes the fifty dimes (new) contained in the standard fifty dime roll package equal in weight to twenty new quarters and ten new half dollars, and standard roll packages contain forty quarters and twenty half dollars, each, when new, weighing twice as much as the fifty new dimes. In view of this fact, I have selected the dime package as a basis of calculation and balance. The coin trough 5 is intended, in the illustrated form of my device, to seat the standard dime roll package. At the opposite side of the knife edge balance or other pivotal point of device there is provided an elongated recess 9 which, in the event of the plate 1 being made of thin metal, might well be substituted merely by a slot. The recess 9 extends longitudinally of the plate 1. The base of the recess is provided with a longitudinal rib 10 which is straddled by the bifurcated lower face 11 of an auxiliary counter weight 12. This fits the sides of the recess rather closely and has an upstanding thumb hold 13 by which it is moved back and forth.

The weight 12 supplements a permanent counter weight 12^a which is made integrally with the plate 1 in any suitable manner. This main or permanent counter weight is but little less in weight than a column of fifty new dimes, which column is herein taken as a standard. The actual counter balancing action is accomplished by the auxiliary counter weight 12, and by virtue of the near balance which is arrived at by the main counter weight 12^a it becomes possible to space the calibrations 19 (Fig. 1) rather far apart so that considerable leeway is allowed in making the adjustments of the auxiliary counter weight in determining a coin count.

In other words, were it not for the main counter weight 12^a and the stated function which it performs, all of the balancing action would rest with the auxiliary counter weight 12 with the consequent disadvantage of having the readings along the scale 19 so narrowly spaced as to make it difficult to place the auxiliary counter weight at its settings. In practice the recess 9, or slot if that be used, will be appreciably longer than indicated. The distance between the graduations 19 will also be appreciably greater. The result is that the counter weight may be moved back and forth in proximity to the various graduations with utmost freedom without the operator having to constantly be on guard for the "breaking point" of the scale. This feature works out in practice to the extent that as much as a ½" variation will be allowed on either side of a given graduation, thus taking into account any possible variation in coin thicknesses and column weights, or in other words combinations of old and new coins in a different package. The quarter and half dollar trough 6, designed to hold standard packages of forty quarters and twenty half dollars, whose weight when new, is each twice that of the fifty new dimes, is like the dime trough in parallel to the knife edge blade 2 and is centered on a line exactly half way between the center line of the dime trough 7 and the line of the knife edge 3 so that the leverage against the weight 12 being reduced to half, the counter weight 12 in its normal position alined with calibration "4" will also balance the forty new quarters and twenty new half dollars of such standard packages. Obviously troughs for other coins may be provided, centered on that line parallel to the knife blade 2 and troughs 5 and 6 predetermined by the proportionate weight of its full count of new coins to that of the full count of new dimes, the length of the plate 1 and position of the counter weight, of course being predicated on the number of troughs used, and on the weight of plate 1 at the coin trough side of the balancing knife edge.

The calibrations 19 edging the slot 9 may be sub-divided as suggested in Fig. 1 and the top face of the counter weight 12 may have a registering line such as shown, or a pointer.

The counter edge face of the scale plate 1 in line with the coin package troughs which as shown, terminate inwardly of said edge, is bored horizontally through on the longitudinal axes of the troughs to receive and guide caliper or gauge rods or bars 14, preferably rectangular in cross section to provide a plurality of faces for calibrating and having their inner ends provided with axially and inwardly extending pointed prongs 14^a of determinate length to penetrate the material of the coin package and contact the outer end coin of the coin column therein, the inner end coin being similarly contacted by the pointed ends of studs 8 at the opposite ends of the troughs. As a variation of this arrangement the calipering may be accomplished by merely graduating one or both edges of the coin troughs or receptacles a distance back from one end agreeing with columns of new and variably worn coin columns.

The lengths of the coin columns in respect to the extremes of full count new coins and full count worn coins of maximum permissible wear, are indicated by calibrations 15 determinately located on a face of the gauge bars 14 and indicating with reference to the outer edge face of the plate 1, the length of the coin column of a package with respect to proportionate degrees of loss of column length through wear up to the maximum permissible loss by wear of a full count of the particular denomination of coin.

Where, as in trough 6, packages of coins of different denominations, quarters and half dollars, are to be seated, the gauge bar 14 for that trough will have two of its faces differently calibrated, one for each coin denomination as shown in Figure 4. In case the edge graduations are employed in lieu of the bar 14, the marks would be of variable length so that quarter and half dollar denominations are readily distinguishable. It is to be clearly understood that the indication of the gauge bar calibrations, or edge graduations, are to be read in direct combination with the auxiliary counter weight 12 in determining a coin count. The gauge bar is to be regarded as a preliminary or initial checking means on the coins solely for the purpose of establishing the fact that a given column contains new worn or mixed coins. The later adjustment of the auxiliary slidable counter weight 12 will indicate the count of coins in the package when a balance is arrived at. The gauge calibrations 15 are scaled in two or more divisions representing the relation of loss of column length to loss by weight and the calibrations edging the counter weight recess 9 are similarly scaled with the weight leverage position of the counter weight 12 in the scaled position precalculated to offset and counter balance a loss in weight by wear.

The coins of a package, if a full count, should, therefore, balance with the counter weight adjusted to the calibration proportioning the loss of weight to loss of column length and preferably indicated by a corresponding scale numeral. If, on the other hand, the coin column length loss indicated by a calibration 15 is within the maximum permissible length loss, but, the coins in the package are of mixed denomination and weights, the counter weight when adjusted to the calibration indicated by the gauge calibration for full count, will not balance the scale platform but will over or under balance. Thus a determinate accurate check of full coin count is afforded and recount of all coin roll packages is avoided, only those being recounted which gauge calibration or scale weighing indicate "short" or "long". Under balance by the counter weight when properly adjusted will indicate the presence of a heavier coin of substantially similar size and different denomination as for example a foreign coin, or a gold coin, and over balance, similarly a lighter coin.

To facilitate the operation of weighing and prevent excessive tilting on the knife edge balance, or other pivotal point, abutment studs 16 depend from the under face of the plate 1 at joints equidistant from the balancing knife edge. The double "click" or "tap" of these studs on the counter or table will furnish a quick audible signal of balance.

As a variation of the foregoing audible signal of the accomplishment of the balancing arrangement in Figure 5 may be adopted. This is a visual signal. The stud 16 (at the left) is here shown in combination with a thin scale plate 1. It is equipped with jam nuts 17, 18 which are so spaced that when the point of the stud touches the counter or table and is thereby stopped, the remaining movement of the plate 1 to the final and dotted line position will in effect make a departure of the stud 17 from the top face of the plate thus indicating to the observer that the balance has been reached. This arrangement and operation is predicated on a loose mounting of the stud 16. In practice it will be desirable to make the stud as light as possible so that there will be no chance of a false reading.

The device is relatively simple in structure and may be accurately made. Initial balance adjustment having been made, and gauging calibrations checked, there is nothing in ordinary use to breed inaccuracy. The package penetrating coin contacting tips 8 and 14^a may be of or coated with wear resisting material so that their accuracy of measurement will

be maintained. Means of any desired character may be used to fix and detachably maintain the counter balancing weight 12 in an adjusted position so that it will not move as the scale plate oscillates. The particular form of the device disclosed illustrates the operative principle of the invention but is intended merely as illustrative thereof and not restrictive, and may be modified in consonance with the spirit of the invention and the scope of the appended claims.

I claim:

1. A device for checking the full count of standard packages of coins by weight comprising a plate balance scale having a coin package seat thereon having a coin column end abutment, gauge means associated with said seat to initially measure the length of said column, said gauge means having associated calibrations in terms of degrees of permissible loss of column length through wear in a full count of coins of the said selected denomination up to the maximum permissible length wear for full count, and a weight on said plate opposed to said package seat normally positioned therein to counter balance the weight of a full count package of new coins of the selected denomination on said seat, and arranged for adjustment from said normal position to calibration-indicated positions coordinating and counterbalancing proportionate weight loss to the coin column length loss by wear indicated by a gauge calibration.

2. A device for checking the full count of standard packages of coins by weight comprising a plate scale having an intermediate balance point with a coin package seat on said plate at one side of said balance point, a caliper bar mounted on said plate for movement longitudinally of the coin column of a package engaging said seat at one end to engage the other end of said coin column and measure its length, said caliper bar having associated calibrations in terms of degrees of permissible loss in column length through wear in a full count of coins of the denomination being measured up to the maximum limit of wear for full count, and a counter balance on said plate at the side of said edge opposite to the coin package, normally positioned to balance the weight of a full count package of new coins of corresponding denomination and mounted for movement relatively to said balance point from position of full count new coin balance to calibration indicated positions providing counter balancing weight corresponding to the proportionate weight loss indicated by the degree of coin column length loss indicated by said caliper bar calibration reading.

3. A device for checking the full count of standard roll packages of coins by weight comprising a platform balance having a pivotal support, and a coin trough therein at one side of said pivotal support, having an abutment engaging one end of the coin package, a caliper bar mounted on said platform to slide longitudinally of the trough from one end thereof to contact the other end of the coin package and measure the length of the column of coins in said package, said caliper bar having associated calibrations in terms of degrees of permissible loss in column length by wear for a full count of the coins of the denomination being measured and cooperating with said platform to indicate the loss defining calibration, and a counter weight on said platform at the side of said pivotal support opposite to the coin package trough having a normal position relatively to said pivotal support to balance the weight of a full count package of new coins of that denomination in said trough and mounted for counter balance adjustment relatively to said pivotal support and to platform calibrations coordinating loss in weight by wear to the loss in column length by wear indicated by said caliper bar calibrations.

4. A device for checking the full count of standard coin roll packages by weight comprising a plate having an intermediate balance point and a coin roll seat thereon at one side of said balance point provided with a roll end abutment penetrating the roll and engaging the coin at one end thereof, a gauging bar mounted on said plate for sliding movement longitudinally of the coin column and having its inner end formed to penetrate the other end of the coin roll to contact the end coin therein and measure the length of the coin column, said gauge bar having associated calibrations extending from the length point of a full count column of new coins of the denominations being measured, to the length point of maximum permissible wear in said full count column and cooperating with said plate to indicate the degree of loss of length in the coin column by wear, and a weight mounted on said plate at the side of said balance point opposite to the coin roll normally positioned relatively to said balance point to balance the weight of a full count package of new coins of the denomination being measured, said weight being mounted for adjustment from said normal point toward said balance point and relatively to plate calibrations proportioning the coin weight loss compensating adjustment of said weight to the coin column length loss indicated by the gauge bar calibrations.

5. A device for checking the full count of standard roll packages of coins comprising a plate having a transverse intermediate balance line, a dime roll trough in said plate at one side of and in parallel to said balance line and determinately spaced therefrom and having an abutment engaging one end of a dime roll therein, a counter weight on said plate at the opposite side of said balance line

normally positioned thereon relatively to said line to balance the weight of a full count roll of new dimes in said dime roll trough, a combined quarter and half dollar roll trough in said plate extending in parallel to said balance line and located midway between said line and dime roll trough to halve the doubled weight of standard new quarter and half dollar rolls and balance with said counter weight, said trough having an abutment to engage one end of a coin roll therein, caliper bars mounted in said plate for sliding movement longitudinally of the troughs to engage the ends of the coin rolls opposite to the trough abutments and measure the lengths of the coin columns of said rolls, said bars having associated calibrations in degrees of loss in coin column lengths from the maximum of full count new coin length to the minimum of full count worn coin length, said counter weight being mounted for adjusting movement relatively to said balance line, said plate having calibrations thereon cooperating with said counter weight and coordinated to the loss of coin column lengths indicated by bar calibrations to counter balance by calibrated adjustment of said weight the coin column weight loss proportionate to the loss in coin column length by wear.

6. A device for checking the full count of standard coin roll packages comprising a table scale having an intermediate transverse balancing line, a plurality of coin package seats thereon at one side of said balance line for standard coin packages of different denominations, a counter weight on said table at the opposite side of said balance line positioned thereon to counter balance the weight of a full count package of new coins on one of said seats with the remaining coin seats positioned in that leverage ratio to the balance line to equal the weight of their full count coin packages, through proportionate leverages, to that of the first balanced coin package of a different denomination of coin.

7. A device for checking the full count of standard coin roll packages comprising a table scale having an intermediate transverse balancing line, a plurality of coin package seats thereon at one side of said balance line for standard coin packages of different denominations, a counter weight on said table at the opposite side of said balance line positioned thereon to counter balance the weight of a full count package of new coins on one of said seats with the remaining coin seats positioned in that leverage ratio to the balance line to equal the weight of their full count coin packages, through proportionate leverages, to that of the first balanced coin package of a different denomination of coin, means for gauging the coin column lengths of coin packages on said seats and for calibrating in degrees the limits of permissible loss of column length of a full count package through wear from its full count new coin length and means for adjusting said counter weight relatively to said balance line to determine by proportion counter balancing leverage to loss of weight in a full count column of coins through wear to the extent calibrated by said gauging means.

8. In a device for checking the full count of standard packages of coins, a base providing a coin package seat and an abutment to engage one end of the column of coins in a package, and a gauge mounted on said base for movement to contact the opposite end of said coin column to measure its length, said gauge having associated calibrations to indicate the limit of reduced column length by maximum permissible wear of a full count of coins of a specific denomination from the full column length of a full count of new coins of that denomination.

9. In a device for checking the full count of standard packages of coins, a base having a coin seat thereon provided with an abutment to engage one end of a coin package and formed to penetrate the material of said package and engage the coin at one end of the coin column therein, and a gauging bar mounted on said base for movement to contact one end thereof with the opposite end of the coin package to measure the length of its coin column, said gauging bar end being formed to penetrate the material of the package to engage the coin at that end thereof, said bar having associated calibrations to indicate the limit of reduced column length by maximum permissible wear of a full count of the determination of coin being measured from the full column length of the coin column of a full count package of new coins of that denomination.

10. A device of the character described comprising a pivoted plate, means at one end of the plate for receiving a column of coins, a main counter balance at the other end of the plate being slightly less in weight than a given column of new coins of a determined denomination, an auxiliary weight movably mounted on said other end of the plate for producing an over-balancing motion of the plate in the direction of the coin column, and means movably associated with said one end of the plate, being subject to movement at the approximate completion of the overbalancing act thus to provide a visual indication of said act.

11. A device for checking the full count of coin packages comprising a plate having transverse balancing means, a dime package trough in said plate at one side of the balancing means and determinately spaced therefrom, a counterweight on said plate at the opposite side of said balancing means normally positioned thereon relatively to said balancing means to balance the weight

of a full-count package of new dimes in said trough, a quarter and half dollar trough in said plate located midway between said balancing means and the dime package trough, said counterweight being mounted for adjusting movement relatively to said balancing means, said plate having calibrations cooperating with said counterweight.

FRED E. FINCH.

H. G. Robinson.

Balance Scales.

No. 9,844. Patented Jul. 12, 1853.

Fig. 1.

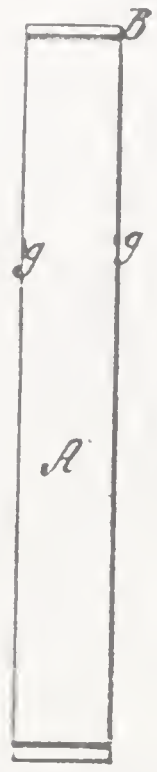


Fig. 2

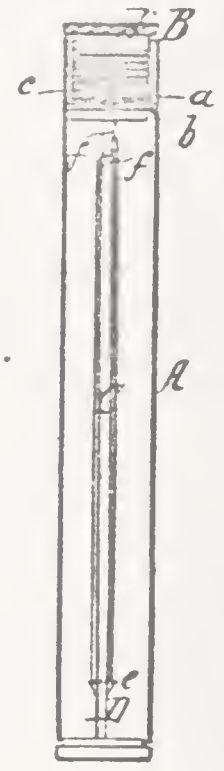
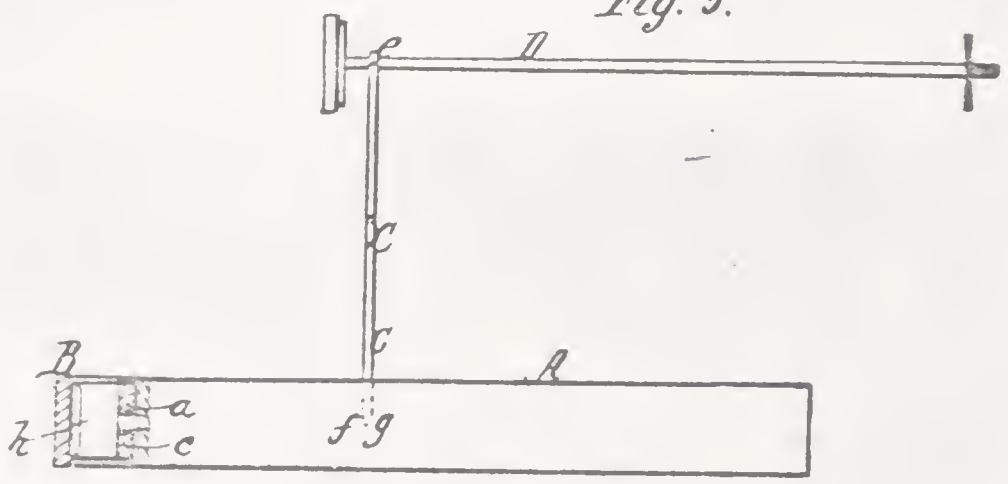


Fig. 3.

Fig. 4.

Fig. 5.



A. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

H. G. ROBINSON, OF SCHUYLKILL HAVEN, PENNSYLVANIA.

COIN SAFE AND DETECTOR.

Specification of Letters Patent No. 9,844, dated July 12, 1853.

To all whom it may concern:

Be it known that I, HENRY G. ROBINSON, of Schuylkill Haven, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Implement for Detecting Counterfeit Coin, said implement also serving as a portable receptacle for money, both coin and bank notes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is an external view of the implement, represented as closed. Fig. 2, is a longitudinal vertical section of ditto, taken through the center. Fig. 3, is a detached perspective view of the gage and coin receptacle. Fig. 4, is a detached view of the clamps. Fig. 5, is a longitudinal vertical section of the case; the clamps being withdrawn, and applied to the case, for the purpose of weighing the coin, in the receptacle at one end of the case.

Similar letters of reference indicate corresponding parts, in each of the several figures.

The implement consists of a cylindrical case, having, at one end, a gage and receptacle box for coin, which will be hereafter described; the remaining portion of the case incloses a pair of clamps, by which the case is suspended, in order to detect a counterfeit coin by its weight. The portion of the case which inclo ses the clamps may also contain bank notes. The implement, therefore, may be used, not only as a detector for counterfeit coin, but may also be carried in lieu of an ordinary wallet or pocket-book. The general construction and arrangement of the several parts of the implement constitute the invention.

A, represents a cylindrical case or tube, having, at one end, a receptacle or gage box, B; Figs. 2, 3, and 5. This box, B, is also cylindrical, and fits within the case, A, and is secured there by a screw, (*a*), attached to a partition (*b*), which screw passes into a female screw, (*c*), in the bottom of the box, B; Figs. 2, 3, and 5. The receptacle or gage box, B, may be sufficiently large or deep to contain several pieces of coin. At the upper or outer end of the box, B, there is a recess, (*d*), cut through and around just one half the circumference of the box; this recess will consequently admit a coin to be passed through it, as large as the box will contain. The width of the recess must equal the width of a genuine coin of such a size as the box is capable of holding. The remaining portion of the case, A, incloses a pair of clamps, C. These clamps are attached, at one end, to a rod, D, by a pivot, (*e*). The opposite ends of the clamps are provided with points, (*f*), (*f*), see Fig. 4, the use of which will be presently shown. The rod, D, has a screw-thread cut upon it, at one end, which screw-thread passes into the center of the screw, (*a*), as the rod, D, is turned, and the rod and clamps are thereby secured within the case, A.

In order to detect counterfeit coin, the gage box, B, is withdrawn from the case, A. If the coin will pass snugly through the recess, (*d*), into the box, it must of course be of the same dimensions as a genuine coin; and, if a counterfeit, it will be lighter. The clamps, C, are then withdrawn from the case, A; and the small points, (*f*), (*f*), are inserted in fulcrum holes, (*g*), (*g*), one on each side of the case, seen in Fig. 1. These fulcrum holes are placed at certain points in the case, so that, when a genuine coin is in the box, B, and the box adjusted within the case, A, the case, A, will exactly balance or be in equilibrium, when the case is suspended at the fulcrum holes, see Fig. 5; the coin being represented by, (*h*). If a counterfeit coin be of the same weight as a genuine one, it will necessarily be larger, and will not pass through the recess into the box, B. Weighing, in this case, would be unnecessary.

If the receptacle or gage box, B, contains several coins, they must be all removed when a coin is to be tested by weighing; and the coin to be tested should be moistened with spittle, to cause it to adhere to the end of the box, as seen in Fig. 5, as a change of position of the coin would cause great inaccuracy in weight.

Bank notes may be wound around the rod, D, and clamps, C, within the case; and the implement will thus form a convenient receptacle for both coin and bank notes, equally as portable as the ordinary wallet or pocket-book.

I do not claim detecting counterfeit coin by means of a gage and scales, for that is well known; but,

What I claim as new, is.—

The peculiar construction of the imple-

ment, and the manner in which the several parts are arranged: by which construction and arrangement, I combine a portable receptacle for both coin and bank notes, convenient for the pocket, and a counterfeit coin detector, the implement being formed of a cylindrical case, A, having a gage box or receptacle, B, at one end; and the remaining portion of the case inclosing the clamps, C, for the purpose as shown, and otherwise constructed, and arranged, substantially as set forth, in the body of the specification.

HENRY G. ROBINSON.

Witnesses:
WM. CHALMERS,
S. C. STANTON.

A. G. Paxton

Balance Scales

No. 9,844. Patented Dec. 12, 1853.

Fig 1.

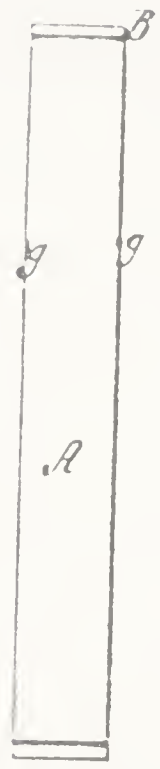


Fig 2

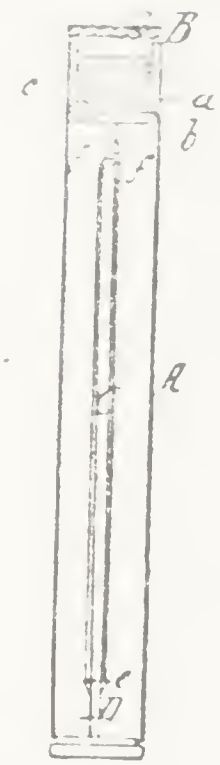
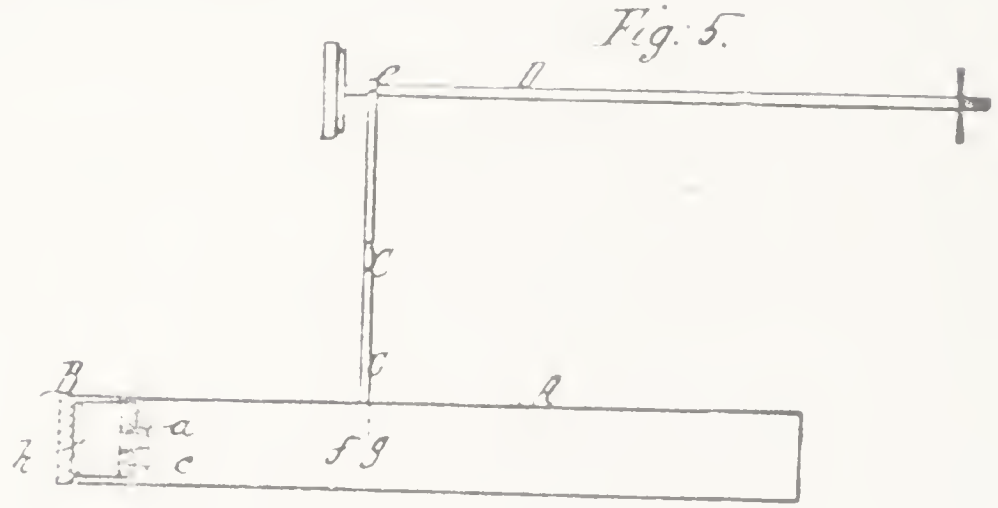


Fig. 3.

Fig. 4

Fig. 5.



UNITED STATES PATENT OFFICE.

H. G. ROBINSON, OF SCHUYLKILL HAVEN, PENNSYLVANIA.

COIN SAFE AND DETECTOR.

Specification of Letters Patent No. 9,814, dated July 12, 1853.

To all whom it may concern:

Be it known that I, HENRY G. ROBINSON, of Schuylkill Haven, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Implement for detecting Counterfeit Coin, said implement also serving as a portable receptacle for money, both coin and bank notes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is an external view of the implement, prepared as closed. Fig. 2, is a longitudinal vertical section of ditto, taken through the center. Fig. 3, is a detached perspective view of the gage and coin receptacle. Fig. 4, is a detached view of the clamps. Fig. 5, is a longitudinal vertical section of the case; the clamps being withdrawn, and applied to the case, for the purpose of weighing the coin, in the receptacle at one end of the case.

Like letters of reference indicate corresponding parts, in each of the several figures.

The implement consists of a cylindrical case, having, at one end, a gage and receptacle box for coin, which will be hereafter described; the remaining portion of the case incloses a pair of clamps, by which the case is suspended, in order to detect a counterfeit coin by its weight. The portion of the case containing the clamps is also constructed to contain bank notes. The implement, therefore, may be used not only as a detector for counterfeit coin, but may also be carried in lieu of an ordinary wallet or pocket book.

The general construction and arrangement of the several parts of the implement constitute the invention.

A, represents a cylindrical case or tube, having at one end, a receptacle or gage box, B; Figs. 2, 3, and 5. This box, B, is also cylindrical, and fits within the case, A, and is secured thereby a screw, (*a*), attached to a partition, (*b*), which screw passes into a female screw, (*c*), in the bottom of the box, B; Figs. 2, 3, and 5. The receptacle or gage box, B, may be sufficiently large or deep to contain several pieces of coin. At the upper or outer end of the box, B, there is a recess, (*d*), cut through and around just one half the circumference of the box; this recess will consequently admit a coin to be passed through it, as large as the box will contain. The width of the recess will be such as a genuine coin of such size as the box is capable of containing, will pass through. Within the case, A, are placed a pair of clamps, C. These clamps are attached, at one end, to a rod, D, by a pivot, (*e*). The opposite ends of the clamps are provided with points, (*f*), (*f*), see Fig. 4, the use of which will be presently seen. The rod, D, has a screw thread cut upon it, at one end, which screw-thread passes into the center of the screw, (*a*), as the rod, D, is pivoted, and the rod and clamps are thereby secured within the case, A.

In order to detect counterfeit coin, the gage box, B, is withdrawn from the case, A. If the coin will pass snugly through the recess, (*d*), into the box, it must of course be of the same dimensions as a genuine coin; and if counterfeit, it will be lighter. The clamps, C, are then withdrawn from the case, A, and the small points, (*f*), (*f*), are inserted in fulcrum holes, (*g*), (*g*), one on each side of the case, seen in Fig. 1. These fulcrum holes are placed at certain points in the case, so that, when a genuine coin is in the box, B, and the box adjusted within the case, A, the case, A, will exactly balance or be in equilibrium, when the case is suspended at the fulcrum holes, see Fig. 5; the coin being represented by, (*h*). If a counterfeit coin be of the same weight as a genuine one, it will necessarily be larger, and will not pass through the recess into the box, B. Weighing, in this case, would be unnecessary.

If the receptacle or gage box, B, contains several coins, they must be all removed when a coin is to be tested by weighing; and the coin to be tested should be moistened with spittle, to cause it to adhere to the end of the box, as seen in Fig. 5, as a change of position of the coin would cause great inaccuracy in weight.

Bank notes may be wound around the rod, D, and clamps, C, within the case; and the implement will thus form a convenient receptacle for both coin and bank notes, equally as portable as the ordinary wallet or pocket book.

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HENRY G. ROBINSON.

Witnesses:
WM. CHALMERS,
N. C. STANTON.

H. G. Robinson.

Balance Scales.

No. 9,844. Patented Jul. 12, 1853.

Fig. 1.

Fig. 2.

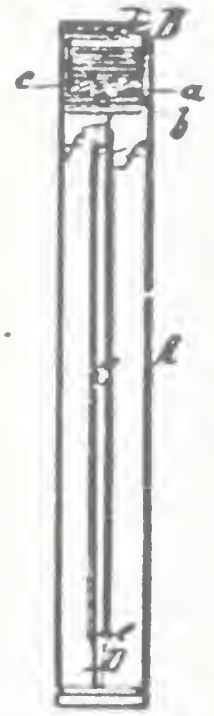
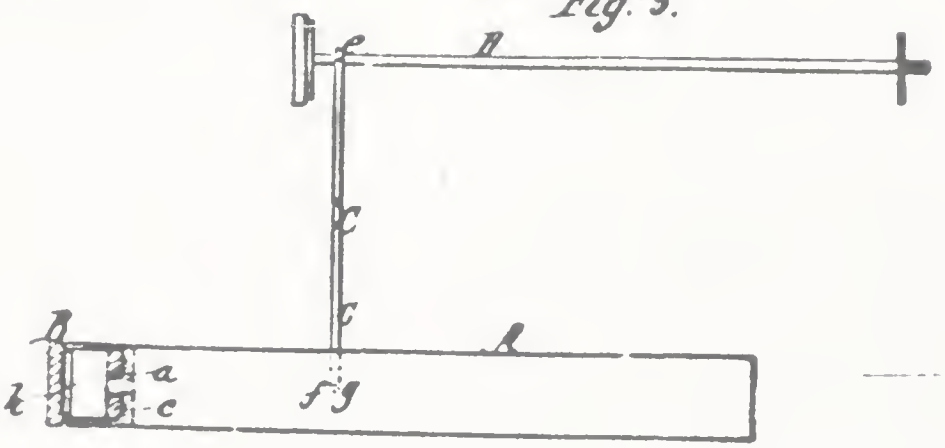


Fig. 3.

Fig. 4.

Fig. 5.



UNITED STATES PATENT OFFICE.

H. G. ROBINSON, OF SCHUYLKILL HAVEN, PENNSYLVANIA.

COIN SAFE AND DETECTOR.

Specification of Letters Patent No. 9,844, dated July 12, 1853.

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The general construction and arrangement of the several parts of the implement constitute the invention.

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I do not claim detecting counterfeit coin by means of a gage and scales, for that is well known; but,

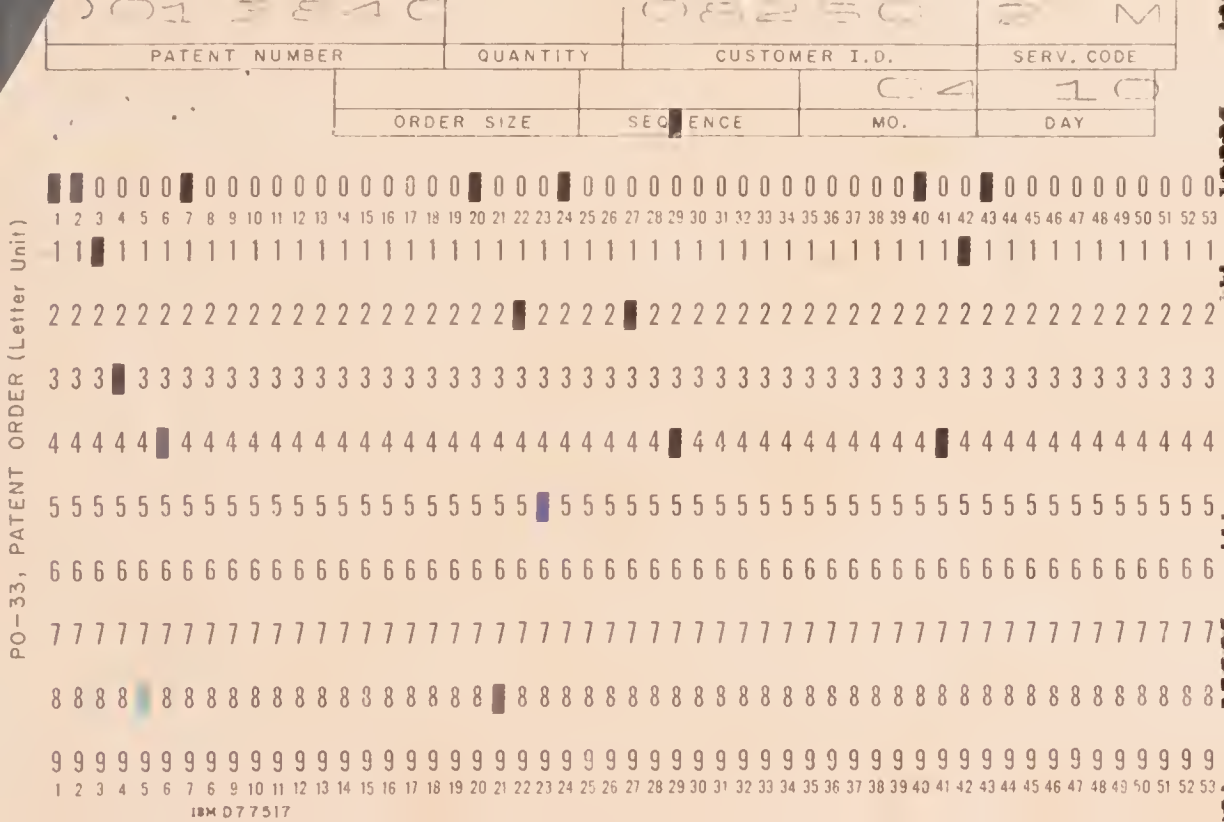
What I claim as new, is,—

The peculiar construction of the imple-

ment, and the manner in which the several parts are arranged; by which construction and arrangement. I combine a portable receptacle for both coin and bank notes, convenient for the pocket, and a counterfeit coin detector, the implement being formed of a cylindrical case, A, having a gage box or receptacle, B, at one end: and the remaining portion of the case inclosing the clamps, C, for the purpose as shown, and otherwise constructed, and arranged, substantially as set forth, in the body of the specification.

HENRY G. ROBINSON.

Witnesses:
WM. CHALMERS,
S. C. STANTON.


PATENT NUMBER
QUANTITY
CUSTOMER I.D.
SERV. CODE
ORDER SIZE
SEQUENCE
MO.
DAY
PO-33, PATENT ORDER (Letter Unit)
IBM D77517

UNITED STATES PATENT OFFICE.

JOHN ALLENDER, OF NEW LONDON, CONNECTICUT.

BALANCE FOR DETECTING SPURIOUS COIN.

Specification of Letters Patent No. 13,840, dated November 27, 1855.

To all whom it may concern:

Be it known that I, JOHN ALLENDER, of New London, in the county of New London and State of Connecticut, have invented a new and useful Apparatus for Proving Genuine and Detecting Spurious Coin; and I do hereby declare that the same is described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan. Fig. 2, a section of Fig. 1, cut through the center. Fig. 3, a plan and section of the weight.

The nature of my invention consists in a lever of a proper size and weight, with a fulcrum a proper distance from its center, which lever is provided with cavities in each arm of a proper size to receive the genuine coin arranged at such distances each side of the fulcrum as to weigh the smaller coins upon the lighter arm without additional weight, and the heavy coins two or more on the heavy arm with one weight, in one position, on the lighter arm.

In the accompanying drawings A is the base of a stand provided with two pillars B B which are perforated to receive the pivots *h h* of the weighing lever C, which may be made in the form represented or such other form as may be desirable, the short arm D being made of sufficient weight to weigh a five dollar gold piece if it is placed in the cavity or coumersink E which is made just large enough to receive the genuine coin, or the three dollar gold piece in the cavity F, or the two and a half dollar gold piece in the cavity G, or the one dollar gold piece in the cavity H, all of which cavities are in the lighter arm I. These cavities are all made just large enough to receive the genuine coin and it is weighed without additional weight on the heavier arm. The weight J is made in the form represented and provided with a projection K fitted to the cavity H, and when placed in said cavity the lever C will weigh a ten dollar gold piece in the cavity L or a twenty dollar gold piece in the cavity M, each of which cavities are made just large enough to receive the genuine gold coins of the denomination named, and both of them are in the short and heavy arm of the lever C. There is a slot directly across the center of each of the cavities in which the coin is weighed just large enough to let the genuine coin pass through freely by its own weight so as to prove the coin by its size as well as its weight.

This apparatus can be made and sold cheaper than any other that will perform the same service with the same facility, and will be found a perfect protection to prove genuine and detect spurious coins which are either larger or lighter than the genuine.

I am aware that balances for proving coin have been made with two levers hung upon one fulcrum so arranged as to weigh all the coins upon one side of the said fulcrum, and when the larger coins were weighed the lever in which the small ones are weighed is turned to the opposite side of the fulcrum. Therefore I make no claim to instruments constructed with more than one lever and to weigh upon one side of the fulcrum only, but

What I do claim as my invention and desire to secure by Letters Patent, is—

A single lever of such a size and weight and provided with cavities or countersinks arranged at such distances each side of the fulcrum, as to weigh the smaller coins upon the lightest arm, without additional weight, and the larger coins two or more on the heaviest arm with one weight, in one position on the lighter arm.

JOHN ALLENDER.

Witnesses:

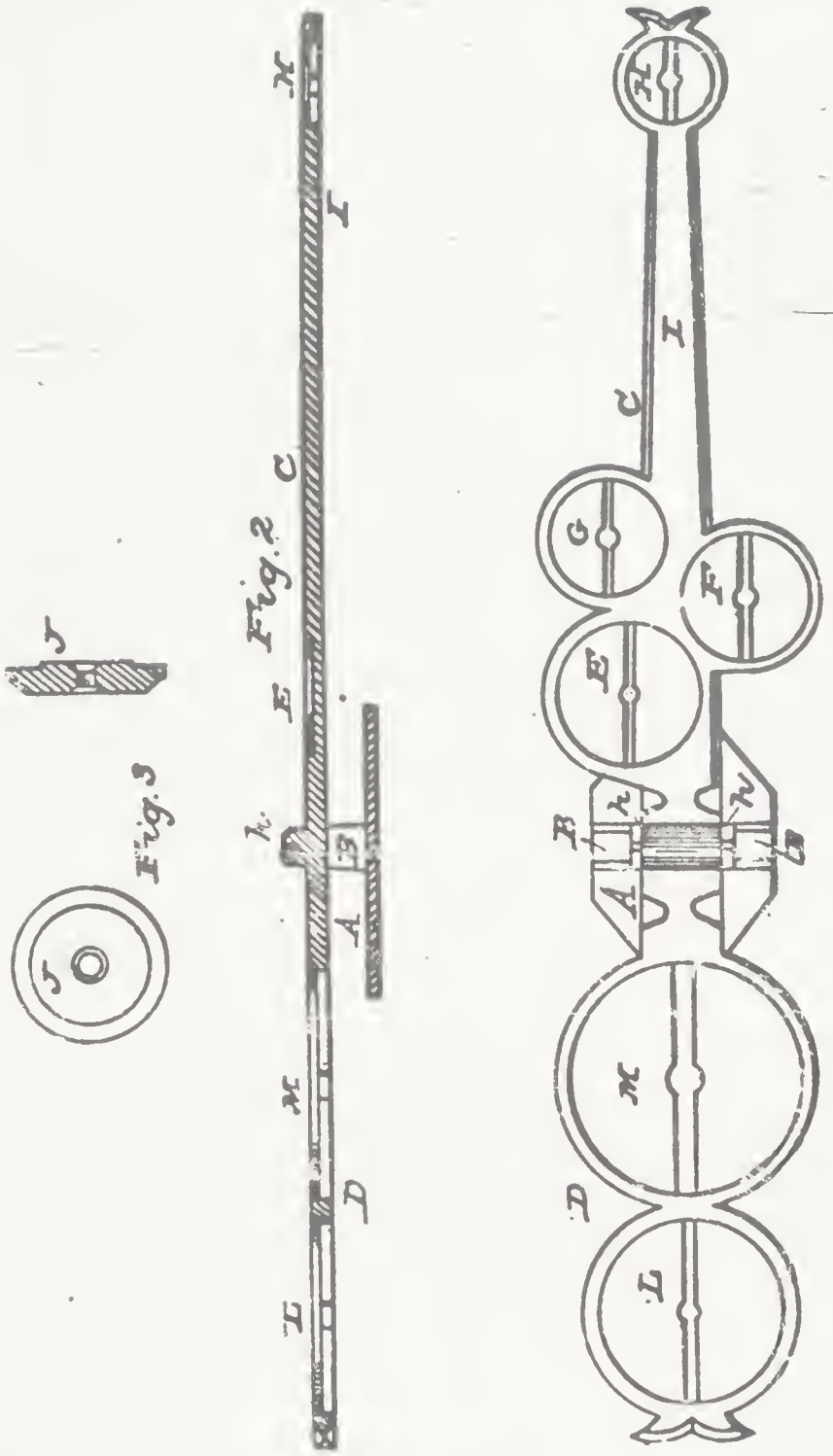
C. PRINCE,

G. C. STILLMAN.

J. ALLENDER.

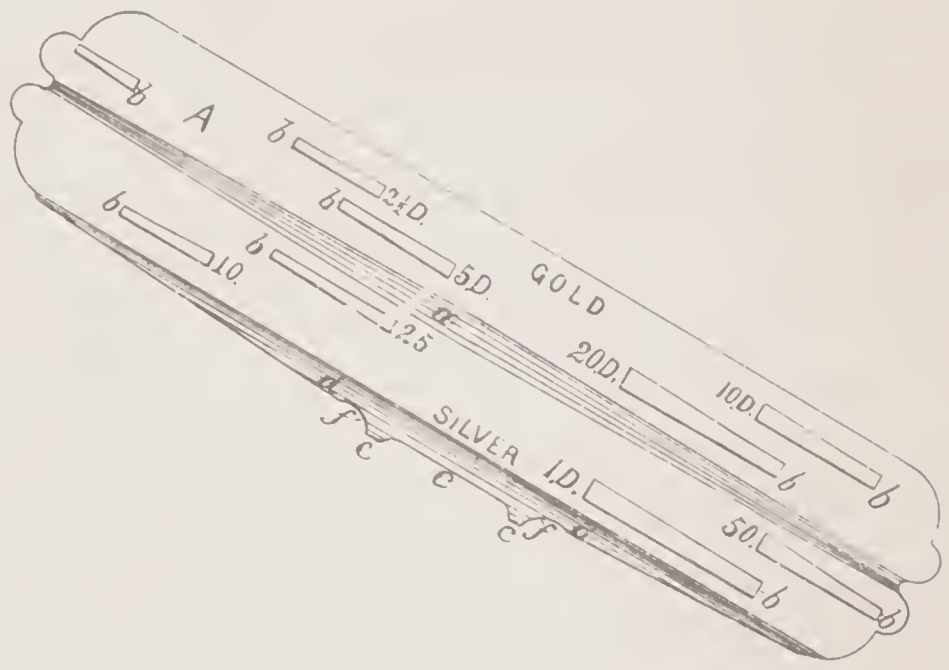
Coin Tester.

No. 13,840. Patented Nov. 27, 1855.



J. A. THOMPSON.
Counterfeit Coin Detector.

No. 224,807. Patented Feb. 24, 1880.



WITNESSES.
Wm Zimmerman
Chas A Ward

INVENTOR
John A. Thompson
By Priddy & C-
Att'y's

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTER.

SPECIFICATION forming part of Letters Patent No. 224,807, dated February 24, 1880.

Application filed January 13, 1880.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Counterfeit-Coin Detecters; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which the figure represents a perspective view of a counterfeit-coin detecter embodying my improvements.

The object of my invention is to provide a device that will readily and surely detect counterfeit from genuine coin; and my invention consists in the construction of the device or detecter, as hereinafter described and claimed.

It is well known that when coin is made wholly or in part of base metal it is lighter than genuine coin of the same size, and if made of the same weight it must necessarily be thicker or larger in diameter than the genuine coin.

In the drawing, A represents a plate of sheet metal of known gage and weight, preferably of brass or German silver, and may be of any desired dimensions, and which is first stamped from a flat piece of metal, and its depending and tapering sides or flanges afterward formed as shown, so as to form the fulcrum for the plate.

In the center of the plate, and running from end to end, is a struck-up rib, *a*, which stiffens and strengthens the plate and divides it into two parts, one side of which is adapted and marked for gold coin and the other for silver. On either side of the rib *a* is a series of slots or perforations, *b*, each of which is of the same width for about one-third of its length, and then gradually increasing in width, so as to form a tapering slot toward the fulcrum of the plate, said slots being of a width sufficient to receive and hold the coin of the desired denomination without allowing it to pass wholly through.

Each of the slots *b* is made wider at its end nearest the fulcrum of the plate, so as to readily receive the coin, while its other end is made of a width corresponding to the thickness of the coin, so that when a genuine coin is placed and held within the slot corresponding to its denomination it will cause the plate to tip down over the fulcrum *c* nearest to such coin, the fulcrum *c* being previously adjusted for that purpose. If the coin is made thicker than and so as to correspond in weight with the genuine coin it will not pass within the desired slot to its proper place, and will, consequently, fail to tip the plate on its fulcrum.

It will be observed that the flanges *d* are made tapering from at or about their fulcrums to their ends, and that the plate A is provided with two fulcrums, *c*, which are formed out of and as a part of the flanges *d*. The space *e* between the fulcrums *c* need not necessarily be cut out, and the notches *f* may be filed away (more or less) for the purpose of adjusting the fulcrums to the plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, substantially as shown and described.

2. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

3. In a counterfeit-coin detecter, the plate A, provided with rib *a*, tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

JOHN A. THOMPSON.

Witnesses:
WM. ZIMMERMAN.
N. COWLES.

PATENT NUMBER	QUANTITY	CUSTOMER I D	SERV CODE

ORDER SIZE	SEQUENCE	MO	DAY

PO-33, PATENT ORDER (Letter Unit)

6,085,707,643

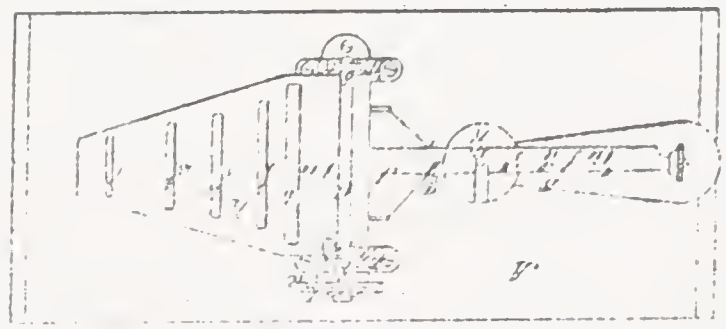


Fig 3

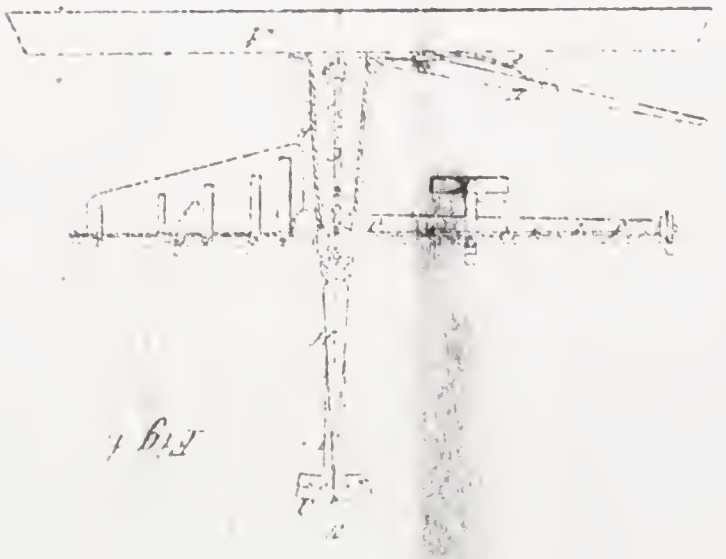


Fig 1

Fig 2

UNITED STATES PATENT OFFICE.

FERDINAND J. HERFERS, OF NEWARK, NEW JERSEY.

BALANCE FOR DETECTING COUNTERFEIT MONEY.

Specification of Letters Patent No. 18,973, dated December 29, 1857.

To all whom it may concern:

Be it known that I, F. J. HERFERS, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Implement or Device for Detecting Counterfeit Gold Coin; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of my improvement, *x*, *x*, Fig. 2, showing the plane of section. Fig. 2, is a transverse vertical section of ditto, *y*, *y*, Fig. 1, showing the plane of section. Fig. 3, is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists of a new article of manufacture, viz., a coin balance, constructed substantially as hereinafter described.

To enable others skilled in the art to make and use my invention I will proceed to describe it.

A, represents the base of the implement, and B, B, are two uprights attached to the base.

C, C, represent two vertical rods which are placed at the inner sides of the uprights B, B, one to each. The lower ends of these rods are connected to the ends of a horizontal rod D, which is attached to the inner end of a lever E, said lever being pivoted at *a*, to the base A, and having a spring F, underneath it, the spring keeping the outer end of the lever elevated, and consequently the inner end depressed.

To the upper ends of the rods C, C, rectangular blocks *b*, *b*, are attached. These blocks *b*, fit in the uprights B, B, which are constructed of metal and bent or formed of three sides so as to serve as guides for the blocks—see Figs. 1 and 3. The blocks *b*, *b*, are also constructed of metal and have each a triangular opening or bearing *c*, made through them to receive the ends of a bar G, which are made in triangular or knife-edged form, similar to the pivots of all scale beams. To one end of the bar G, an index H, is attached and a vertical bar I, is suspended to said bar near the index H, the lower end of the bar I, being heavier than its upper part so that it will be retained in a vertical position, and the upper end of said bar having a segment *d*, attached to it with a vertical mark *e*, made at its center—see Fig. 1.

To the bar G, the scale beam J, is attached. One end or part, *f*, of this scale beam is graduated or has small holes *g*, made in it to receive the point of a weight K, said holes being made in the beam at proper points and numbered corresponding to the different denominations of U. S. gold coin, see Fig. 3. The opposite end of the scale beam is formed of a plate *h*, having slots *i*, made in it, said slots corresponding in length and width to the several U. S. gold coins, see Fig. 3. To the under side of the plate *h*, a vertical plate *j*, is attached, said plate being slotted vertically, the vertical slots corresponding in width to the slots *i*, and being in line with them, see Fig. 1.

The knife-edged ends of the bar G, fit in V-shaped notches *k*, in the upper ends of the uprights B, B, when the implement is not in use—the ends of the bar being kept in the notches *k*, by the spring F. By this means the bearings and knife edges of the bar G, are kept in order or prevented from being injured by unnecessary wear.

The implement is used as follows. Suppose a $2½ gold piece is to be tested. The coin is placed in the slot marked 2½ in the plate *h*, said coin also fitting in the slot in the plate *j*, directly in line with the slot in the plate *h*. If the coin fits snugly in these slots it is of proper dimensions. The outer end of the lever E, is then depressed and the blocks *b*, are elevated so that the bearings *c*, are raised above the upper ends of the uprights B, B, and the ends of the bar G raised above or out of the notches *k*, in the upper ends of the uprights B, B. The scale beam J, then rests in the bearings *c*, and the point of the weight K, being placed in the point marked 2½ on the end or part *f*, of the scale beam, the coin will more than counterbalance the weight and the index H, will be moved to the right of the mark *e*, on the segment *d*, and the coin is proved to be genuine.

Counterfeit coin, if of the same size as the genuine ones, are necessarily lighter, because the alloy is of less specific gravity than gold. If a spurious coin be of the same weight as a genuine one, the spurious coin

will necessarily be larger, consequently by measuring and weighing the coin spurious ones may be readily detected.

I have graduated the scale-beam so that new genuine coins will more than counterbalance the weight K, in order to allow for a deficiency in weight occasioned by wear, but the wear will never be so great as to prevent genuine coins from exactly balancing the weight and causing the index to be at the point *c*, on the segment. If a coin be not sufficiently heavy to do this, it is spurious.

I have practically tested the above described machine as follows: I took two pieces of gold, one being 21⅔ carats U. S. standard, and the other 18 carats. These two pieces I worked into wires exactly of the same thickness. The piece of 21⅔ carats, I made of the same weight as a half-eagle or $5 gold piece. The piece of 18 carats wire was then cut so as to correspond exactly in size with the wire of 21⅔ carats. I then weighed the two pieces of wire and found the wire of 18 carats to be 18 grains lighter than the one of 21⅔ carats, thereby showing a difference of 3⅔ grains on the dollar. If, therefore, an allowance of one grain on the dollar be made for the wear of gold coin, to which extent it probably will not wear, as only the projecting surfaces are exposed, the implement will detect base coin made of as good a quality or of as fine gold as profit would permit.

I am aware that there is in some coins a small difference in size owing to the different degrees of pressure given it by coining, but this difference is so minute, and the difference between the genuine coin and 18-carat gold so great, being (after a deduction of one grain on the dollar for wear) 2⅔ grains, that a well constructed implement will detect any base coin. The accuracy, therefore, of an implement for the purpose of detecting base coin is important, and by having the implement constructed or arranged as shown so that the beam is not allowed to rest in its bearings when not in use, the bearings are kept in perfect order, being subjected to wear only when the implement is used.

I am aware that implements have been previously invented for effecting the same purpose as the one herein described. I therefore do not claim detecting spurious coin by weight and measurement irrespective of the construction of the implement as described, but to the best of my knowledge and belief, it is new in balances of this description to arrange the knife-edges as herein described, so that the knife-edges can only come in contact with their bearings at the moment of weighing.

I do not claim to be the inventor of sliding or movable supports for the knife-edges, as this feature is seen in jewelers' scales, apothecaries' scales, etc. But in all of these, it will be found that the knife-edges rest upon their bearings when the scales are not in use. Consequently every concussion or jarring in the apartment or building injures the knife-edges and bearings, and after a time the scales become inaccurate. This can never happen in my improvement, because the knife-edges never come in contact with their bearings, except when the lever is pressed, and they wholly separate and are held steadily apart when the lever is released. It is also new to have vertical pockets of the exact size of the coins, upon the fulcrum bar, which pockets serve as measures of the dimensions of the pieces of money, and also indicate the exact spot where the coin is to be placed by the operator. I do not, however, claim, broadly, the placing of gages or receptacles upon balances. But no balances have ever been arranged with a number of vertical pockets in close proximity. The apparatus is thus made very compact and highly convenient.

I do not claim to be the inventor of swinging index-bars for weighing machines; and therefore I disclaim the same as used in my apparatus. Their employment is not essential as my instrument can be made and used either with or without the same, as may be desired.

No coin balance like mine has ever been known or used, to the best of my knowledge and belief. It is therefore a new article of manufacture, and possesses useful qualities not seen in any other analogous article.

I claim and desire to secure by Letters Patent, as a new article of manufacture,—

A coin balance when constructed as herein described.

FERDINAND J. HERPERS.

Witnesses:

JAMES F. BUCKLEY,

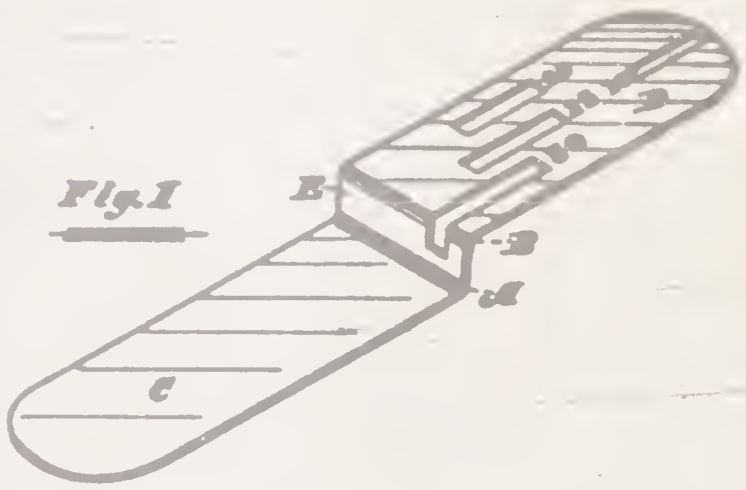
W. TUSCH.

J. A. THOMPSON.

DETECTORS OF COUNTERFEIT COIN.

No. 187,936. Patented Feb. 27, 1877.

Fig. 1



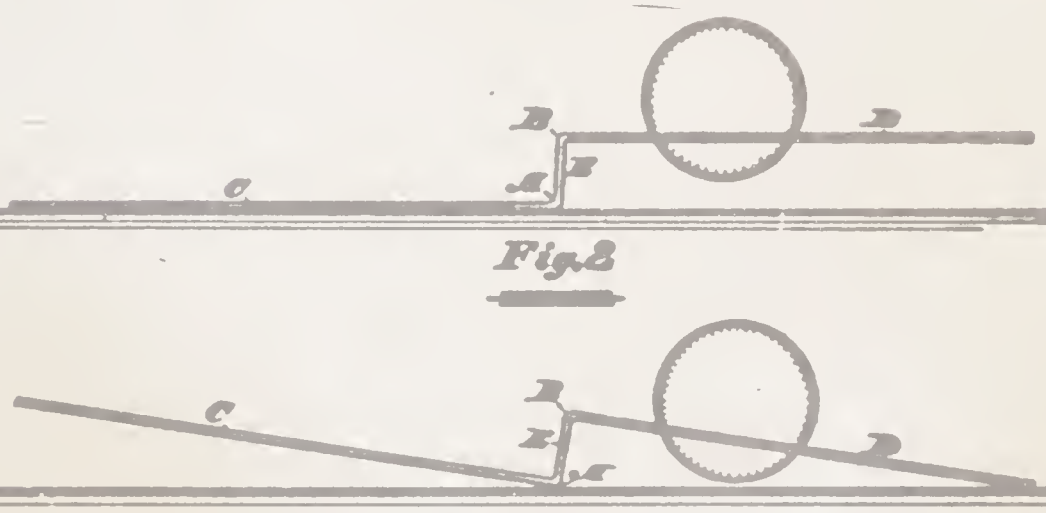


Fig. 2

Fig. 3

3

Attest:

W. T. Baker

A. P. Teel

INVENTOR:

John A. Thompson

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ASSIGNOR TO FRANCIS M. SMITH, OF LAKE, ILLINOIS.

IMPROVEMENT IN DETECTERS OF COUNTERFEIT COIN.

Specification forming part of Letters Patent No. 187,9[illegible], dated February 27, 1877; application filed January 12, 1877.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Detecters of Counterfeit Coin, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

Figure 1 is a perspective top view of my detecter. Fig. 2 is a side view in the position which it occupies when testing a counterfeit coin. Fig. 3 is a side view in the position it occupies when testing a genuine coin.

The instrument is simply a plate of metal, or other suitable material, (in size and shape similar to an ordinary paper-knife,) with a right-angular bend in or near the middle, as shown in the drawings. On one side of this right-angular bend or fulcrum the plate is plain, with its outer end, when the instrument is not in use, resting on the table, counter, desk, or other level support. On the other side of the right-angular bend or fulcrum the plate contains slots, as per drawings, for coins of different denominations to be tested. The slotted end of the plate contains, say, four places for United States coin, marked respectively ten, twenty, twenty-five, fifty, corresponding to the denominations, in cents, of the most common United States silver coins, and may contain a slot for any coins, United States or foreign, silver or gold. These slots are of such nicely and properly graduated distances from the right-angular bend or fulcrum, according to metrical rules and tests, that when a genuine coin is placed in its proper receptacle, it barely tips the plate on its angular bend or fulcrum until the slotted end rests on the table or other support, as shown in Fig. 3 of the drawings. Consequently, when a counterfeit coin is placed in the slot corresponding to its denomination, it is immediately detected by its light weight in not tipping the balance, or its greater bulk in filling the slot, as the spurious metal, as is well known, is almost invariably lighter than the genuine, and the coin must therefore be necessarily lighter or larger.

What I claim as new and as my invention, and desire to secure by Letters Patent, is—

The coin-weighing plate C D, provided with the right-angular bend A B, and slotted at D, substantially as described, and for the purpose set forth.

JOHN A. THOMPSON.

Witnesses:

F. J. SEYBOLD,

A. J. KIDD.

UNITED STATES PATENT OFFICE.

JOHN ALLENDER, OF NEW LONDON, CONNECTICUT.

BALANCE FOR DETECTING SPURIOUS COIN.

Specification of Letters Patent No. 13,840, dated November 27, 1855.

To all whom it may concern:

Be it known that I, JOHN ALLENDER, of New London, in the county of New London and State of Connecticut, have invented a new and useful Apparatus for Proving Genuine and Detecting Spurious Coin: and I do hereby declare that the same is described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan. Fig. 2, a section of Fig. 1, cut through the center. Fig. 3, a plan and section of the weight.

The nature of my invention consists in a lever of a proper size and weight, with a fulcrum a proper distance from its center, which lever is provided with cavities in each arm of a proper size to receive the genuine coin arranged at such distances each side of the fulcrum as to weigh the smaller coins upon the lighter arm without additional weight, and the heavy coins two or more on the heavy arm with one weight, in one position, on the lighter arm.

In the accompanying drawings A is the base of a stand provided with two pillars B B which are perforated to receive the pivots *h h* of the weighing lever C, which may be made in the form represented or such other form as may be desirable, the short arm D being made of sufficient weight to weigh a five dollar gold piece if it is placed in the cavity or countersink E which is made just large enough to receive the genuine coin, or the three dollar gold piece in the cavity F, or the two and a half dollar gold piece in the cavity G, or the one dollar gold piece in the cavity H, all of which cavities are in the lighter arm I. These cavities are all made just large enough to receive the genuine coin and it is weighed without additional weight on the heavier arm. The weight J is made in the form represented and provided with a projection K fitted to the cavity H, and when placed in said cavity the lever C will weigh a ten dollar gold piece in the cavity L or a twenty dollar gold piece in the cavity M, each of which cavities are made just large enough to receive the genuine gold coins of the denomination named, and both of them are in the short and heavy arm of the lever C. There is a slot directly across the center of each of the cavities in which the coin is weighed just large enough to let the genuine coin pass through freely by its own weight so as to prove the coin by its size as well as its weight.

This apparatus can be made and sold cheaper than any other that will perform the same service with the same facility, and will be found a perfect protection to prove genuine and detect spurious coins which are either larger or lighter than the genuine.

I am aware that balances for proving coin have been made with two levers hung upon one fulcrum so arranged as to weigh all the coins upon one side of the said fulcrum, and when the larger coins were weighed the lever in which the small ones are weighed is turned to the opposite side of the fulcrum. Therefore I make no claim to instruments constructed with more than one lever and to weigh upon one side of the fulcrum only, but

What I do claim as my invention and desire to secure by Letters Patent, is—

A single lever of such a size and weight and provided with cavities or countersinks arranged at such distances each side of the fulcrum, as to weigh the smaller coins upon the lightest arm, without additional weight, and the larger coins two or more on the heaviest arm with one weight, in one position on the lighter arm.

JOHN ALLENDER.

Witnesses:

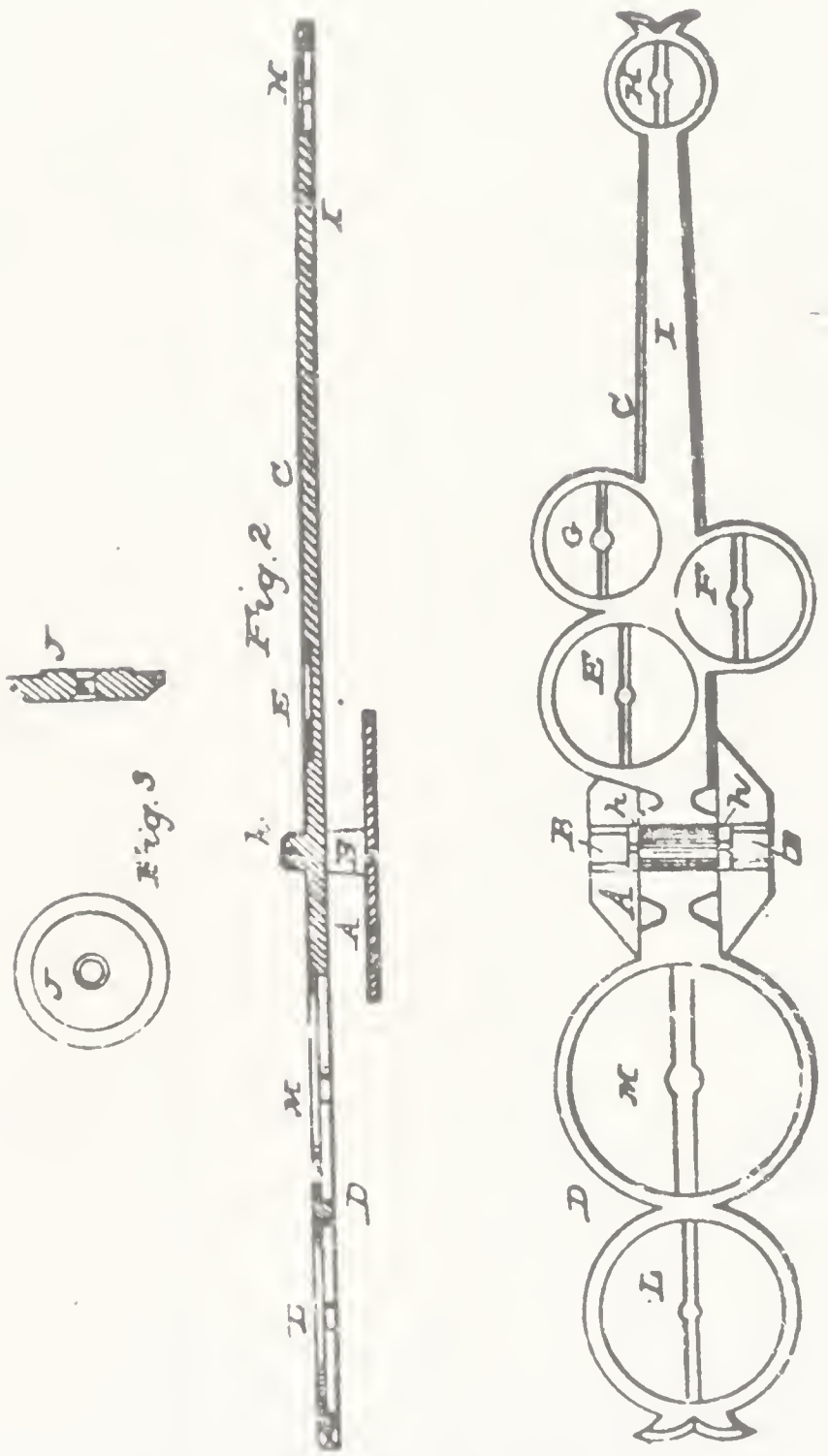
C. PRINCE,

G. C. STILLMAN.

J. ALLENDER.

Coin Tester.

No. 13,840. Patented Nov. 27, 1855.



No. 867,304. PATENTED OCT. 1, 1907.

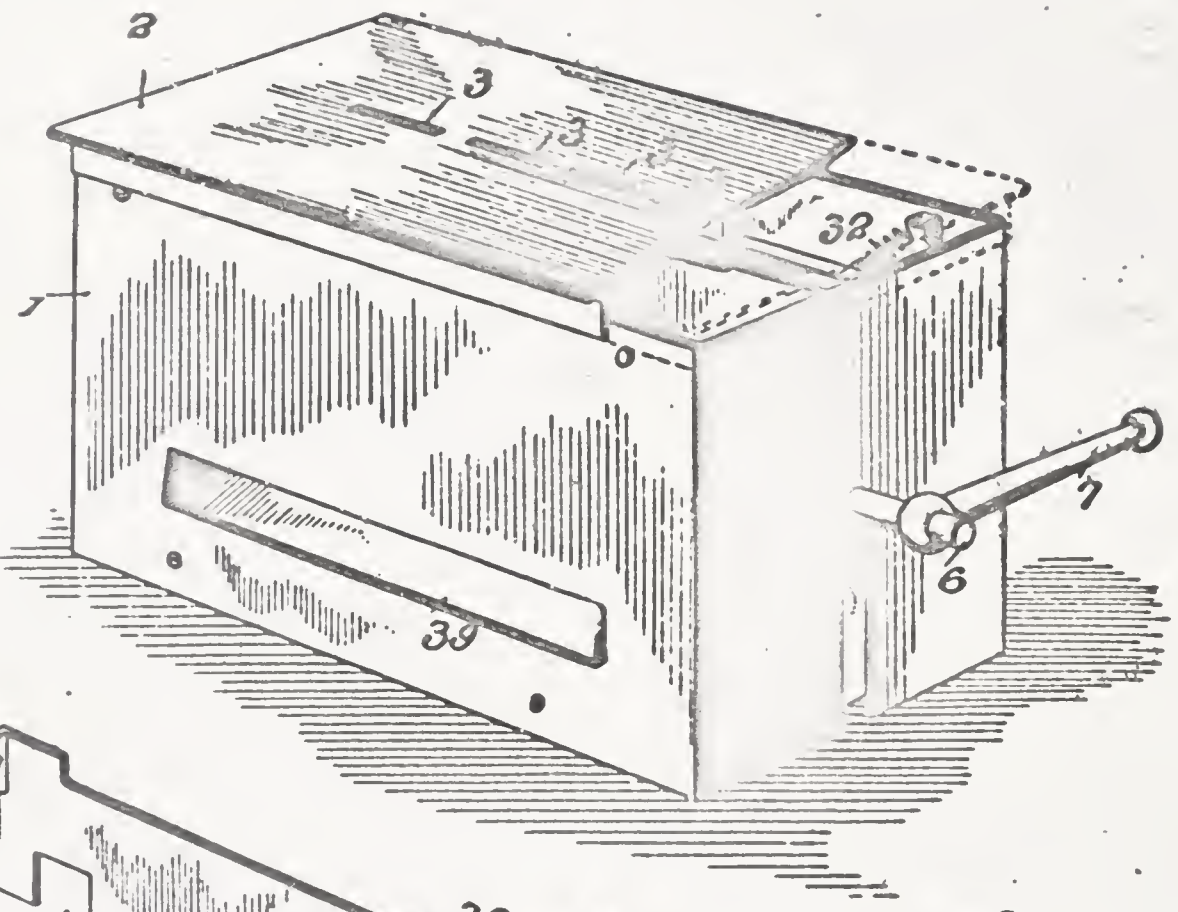
M. D. SADTLER.

COIN TESTING MACHINE.

APPLICATION FILED JUNE 22, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



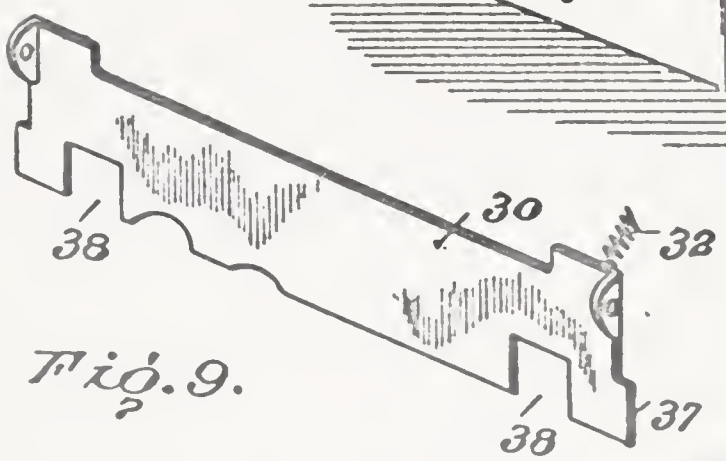


Fig. 9.

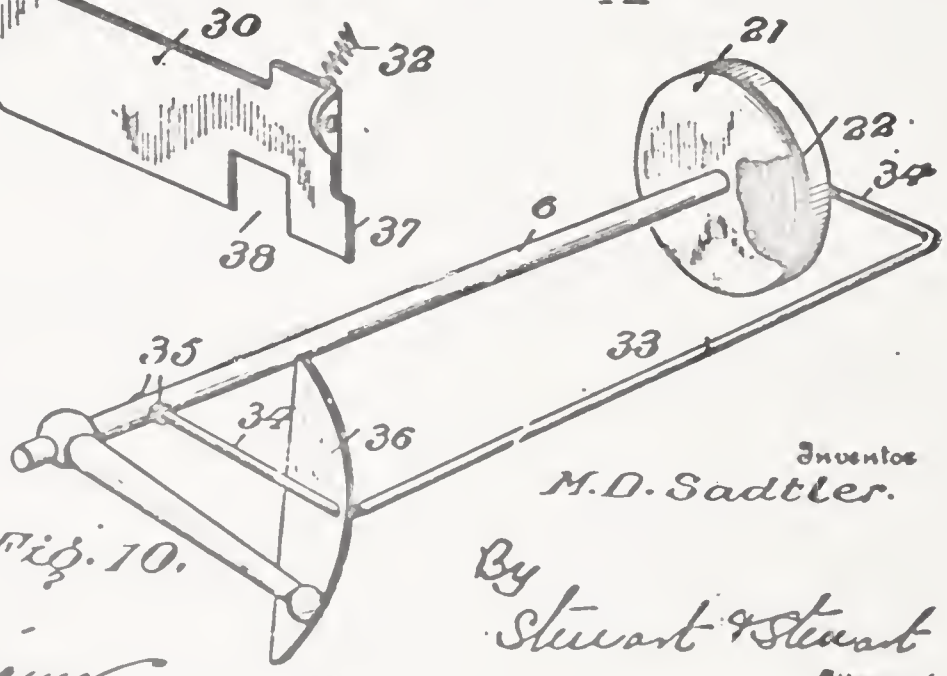


Fig. 10.

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A. B. Williams

Inventor
M. D. Sadtler.

By Stewart & Stewart
Attorneys

No. 867,304. PATENTED OCT. 1, 1907.

M. D. SADTLER.

COIN TESTING MACHINE.

APPLICATION FILED JUNE 22, 1906.

3 SHEETS—SHEET 2.

Fig. 2.

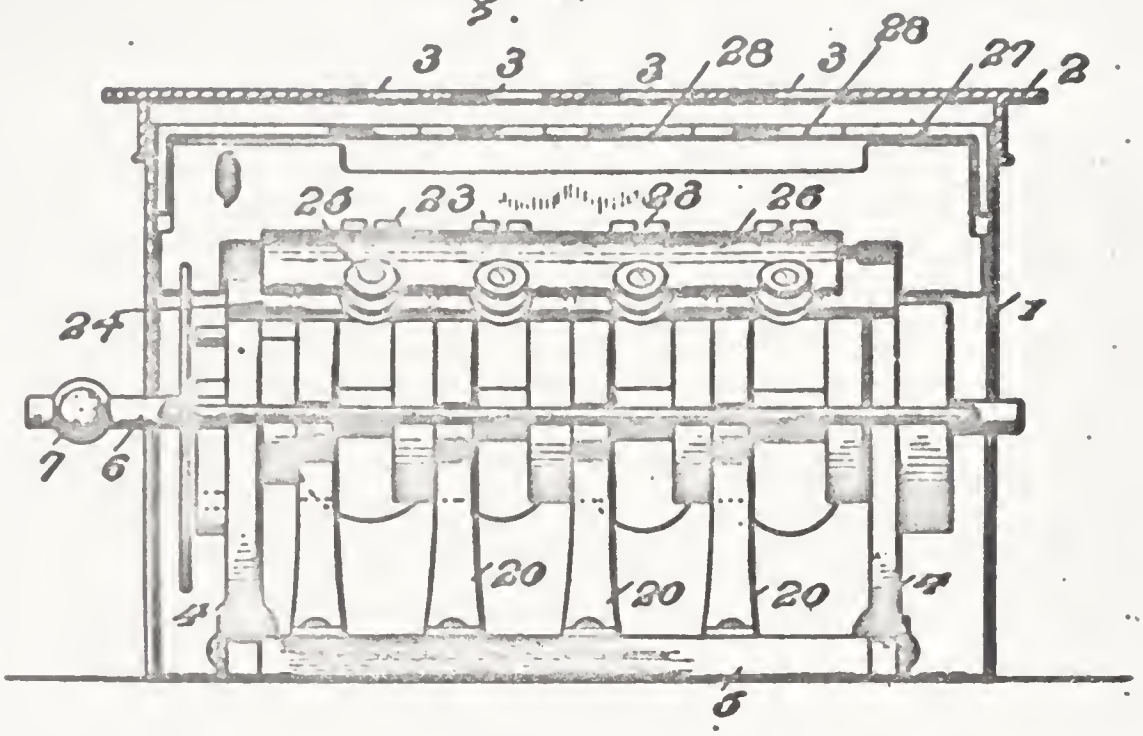


Fig. 3.

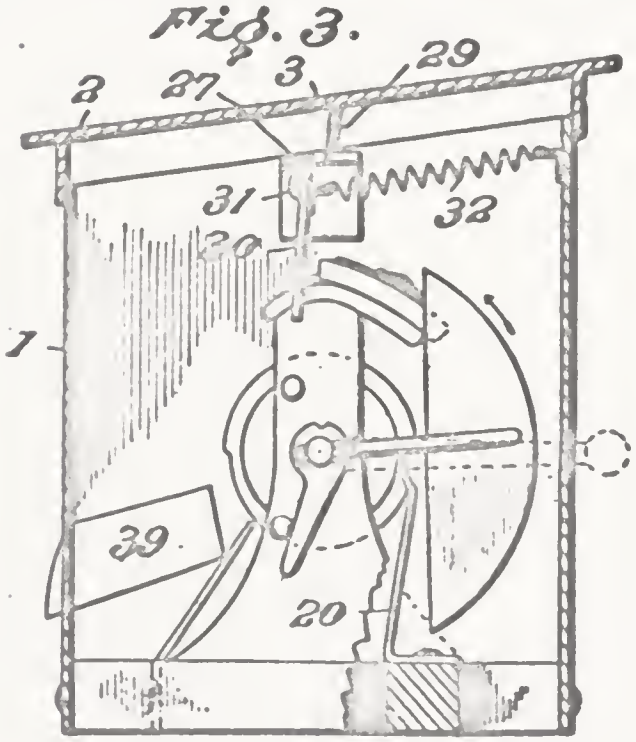
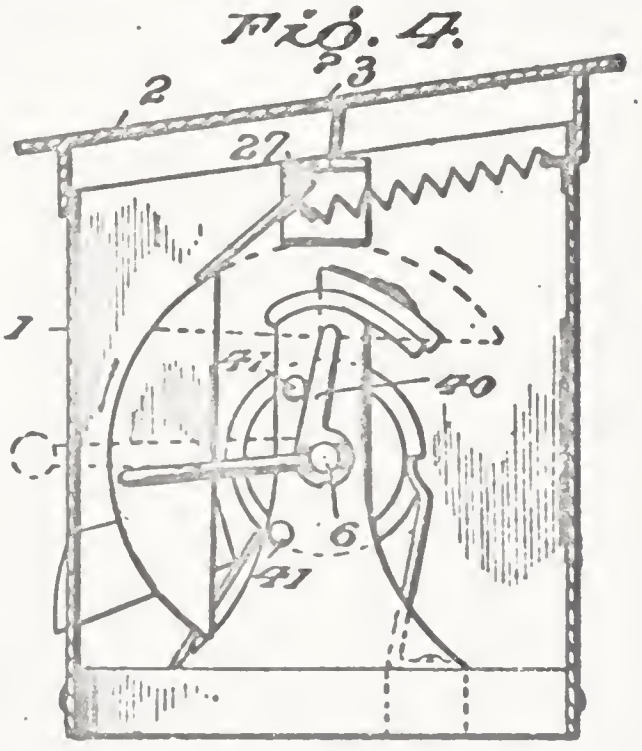


Fig. 4.



Inventor
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Witnesses
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A. B. Williamson

By Stewart & Stewart
Attorneys

THE HOOKER PETERS CO., WASHINGTON, D. C.

No. 867,304. PATENTED OCT. 1, 1907.

M. D. SADTLER.

COIN TESTING MACHINE

APPLICATION FILED JUNE 22, 1906.

3 SHEETS—SHEET 2.

Fig. 5.

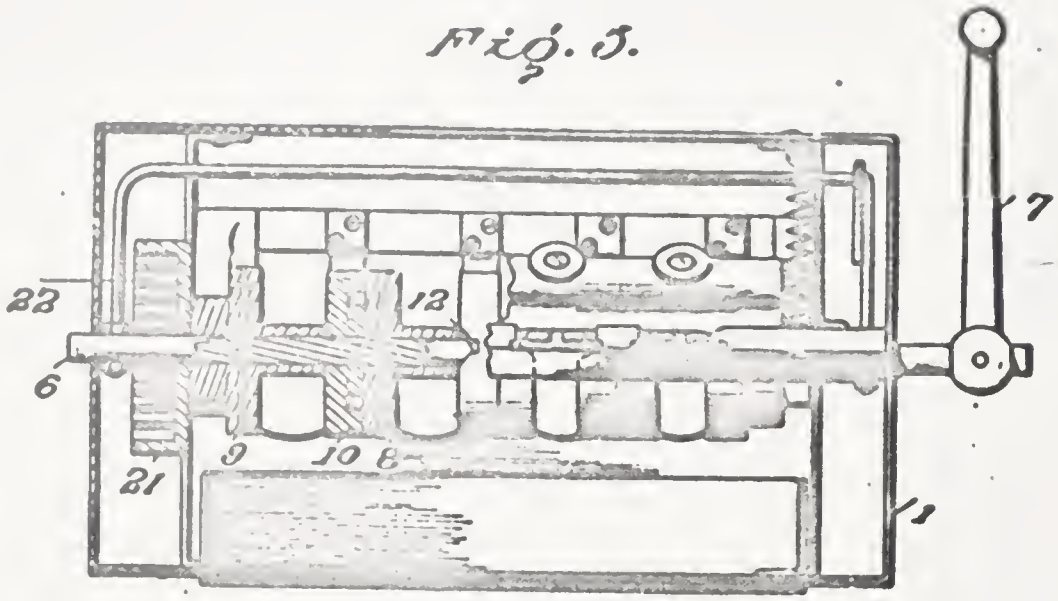


Fig. 6.

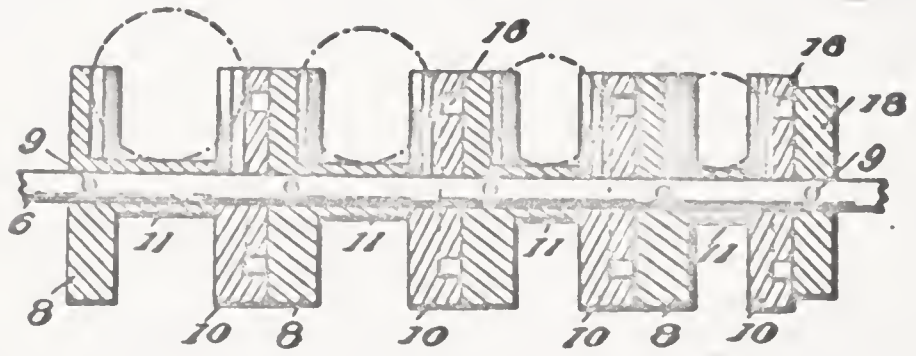


Fig. 7.

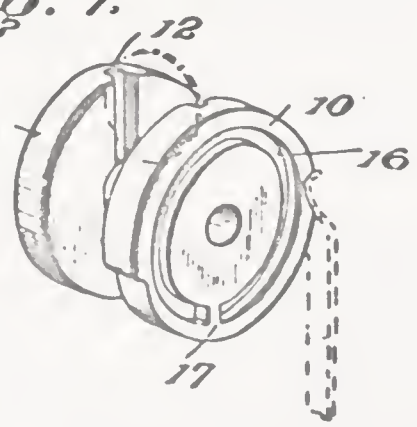
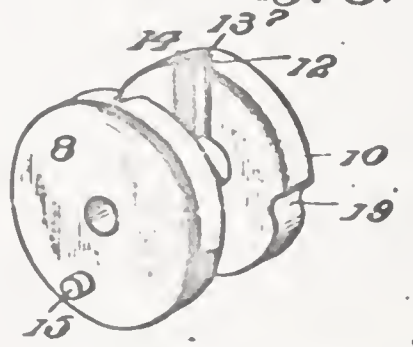


Fig. 8.



Witnesses

Jno. Imirie

A. B. Williams

Inventor

M. D. Sadtler.

By Stuart & Stuart

Attorneys

UNITED STATES PATENT OFFICE.

MORGAN D. SADTLER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO JESSE B. FORRESTER, OF BALTIMORE, MARYLAND.

COIN-TESTING MACHINE.

No. 867,304. Specification of Letters Patent. Patented Oct. 1, 1907.

Application filed June 22, 1906. Serial No. 322,904.

To all whom it may concern:

Be it known that I, MORGAN D. SADTLER, a citizen of the United States of America, and a resident of Baltimore city and State of Maryland, have invented certain new and useful Improvements in Coin-Testing Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in coin testers adapted to be used in connection with coin controlled machines of all types.

The object of my invention is to provide a mechanism which will test each coin dropped into the machine and if it is attempted to operate the machine by what is commonly called a slug, the mechanism will throw out the slug, though it is of the proper size, diameter, thickness and weight.

My invention tests each coin presented to the machine and unless the coin is of the proper size, diameter, thickness and made of the proper metal, the tester will not pass the coin in a manner to operate the coin actuating mechanism to which the tester is applied.

In the form of my invention shown, the tester is adapted to test various denominations of coins. It is to be understood, however, that the number of denominations which can be tested may be varied as desired.

Referring to the drawings, wherein I show one embodiment of my invention for the purpose of illustrating the same and wherein the same part is designated by the same reference numeral wherever it occurs, Figure 1 is a perspective view of a coin tester adapted to be applied to any suitable form of coin controlled mechanism, the top of the case being partly broken away. Fig. 2 is a longitudinal section of the case showing the testing mechanism in side elevation. Fig. 3 is an end view showing the case in section and operating parts in elevation and in their normal position. Fig. 4 is a view similar to Fig. 3 showing the parts in the position they occupy at the limit of movement of the mechanism during the testing operation. Fig. 5 is a top plan view partly in section of the device with the cover removed. Fig. 6 is a central longitudinal section of the testing disks, the shaft on which they are mounted being shown in elevation. Fig. 7 is a detail perspective view of a pair of disks removed from the shaft. Fig. 8 is a view similar to Fig. 7 showing the other side of a pair of disks. Fig. 9 is a detail view of the hinged member of the coin guide. Fig. 10 is a detail perspective view of the shaft on which the disks are mounted and connected thereto, the disks not being shown on the shaft.

1 designates a rectangular case provided with a cover 2 having slots 3 formed therein for the insertion of coins.

4—4 designate a pair of side frames which are secured to a base 5, these side frames preferably and as shown, are provided with means by which the case 1 may be secured thereto to inclose the testing mechanism.

6 designates a shaft journaled in bearings in said frames 4 and provided at the end with a handle 7 which is located outside the casing 1.

8 designate a series of disks mounted on the shaft 6, the disks being secured to the shaft by any suitable means, as for instance, the pins 9.

10 designate a second series of disks which are loosely mounted on the shaft.

11 are spacing sleeves which, preferably and as shown, are formed integral with the disks 8 and hold the disks 10 spaced a proper distance away from the face of the disks 8. Each of these disks 8 and 10 is provided with a slot 12, the slot being formed radially of the disk, the walls of the slot at the bottom 13 and for about half the distance to the face of each disk being parallel, the walls then being beveled outwardly as at 14, whereby a slot of a substantially V-shaped cross-section is formed, as is best seen in Fig. 7 and 8. The disks are assembled on the shaft so that a fast disk and a loose disk alternate. The hub 11 extends from the side of the disk 8 which is provided with the slot 12. The slot of the loose disk 10 which is separated from the fast disk 8 by spacing sleeve or hub 11, faces the slot in the fast disk whereby the disks form by their slots a pair of jaws adapted to receive a coin, the length of the hubs 11 determine the size of coin which each pair of jaws is adapted to receive.

The pair of jaws are preferably and as shown, assembled on the shaft so that the fast and loose disks of adjacent pairs of jaws are in contact whereby the loose jaws are held from endwise movement on the shaft. On the face of each of the fast jaws opposite that containing the slot, I preferably provide a pin 15 adapted to engage a concentric groove 16 formed in the adjacent face of the loose disk.

17 is a stop formed in the groove 16 with which the pin 15 is adapted to contact, whereby the disk 10 will be caused to rotate with the fast disk 8 when the pin and stop are in contact. The pin 15 and the stop 17 in the slot 16 are so located with respect to each other that when each of the fixed jaws is in normal position, the loose jaws will be held in their normal position by contact between the pin 15 and the stop 17.

18 is a disk mounted on the end of the shaft adjacent the end loose disk and secured to the shaft by a pin 9 the same as the fast disks 8. The disk 18 is provided with a pin 15 adapted to engage with the stop 17 in the groove 16 of the adjacent loose disk, whereby this loose disk will be caused to turn to its normal position by the pin engaging the stop in the same manner as the other loose disks.

19 are notches cut in the side of each of the loose

disks with which the free end of springs 20 are adapted to engage. The springs 20 are secured at their base to the frame 5 and they are so positioned that their free ends will engage the notches in the loose disks to hold the loose disks in their normal position in line with the slots of the fast disks when they are in normal position, as shown in Figs. 5 and 6. These springs also act to produce a sufficient resistance to the rotation of the loose disks as to cause the pairs of disks to bend a coin held between them which is of less hardness than standard, because the loose disks will not be moved unless the coin or token is of the hardness of the standard coin.

21 is a flanged disk which is secured to one side of the side frames 4 and through which the shaft 6 loosely passes. To the inside of the flange of this disk is secured one end of a clock spring 22, the other end of the clock spring being secured to the shaft 6 whereby the spring will operate to return the parts to their normal position as soon as the handle is released after the operation of the machine.

In order to prevent slugs formed of iron, such as washers and the like, from being fed into the machine, which might operate the machine, if they were of the proper size to accurately fit the slot in a pair of disks and of the proper thickness to be positioned in the slots, due to the fact that they are so hard that they would not be bent under the twisting action of the pair of jaws, I mount a series of magnets 23 on a plate 24 extending between the side frames 4 and over the disks. These magnets 23 are shown as secured to the plate 24 by means of the screw 25, one magnet being arranged over each pair of jaws.

26 is a plate covering all of the magnets except their ends and held in position by means of the screws 25. The magnets are shown as being horse-shoe magnets and the ends of the horse-shoes are so located as to be adjacent the path of the coin from the coin slots 3 to the slots in the disks, as is best shown in Fig. 5. From this, it will be seen that should an iron washer or similar slug be inserted in the machine, it will be stopped by the magnets and held, thus, preventing such slug from entering the machine.

27 designates a frame which extends from one end of the case to the other and is located near the top of the case. This frame is provided with coin slots 28 which register with the slots 3 in the top of the case.

29 is a guiding flange which extends downward from the top 2 adjacent the slots 3 on to the top of the frame 27 beside the coin slots 28 whereby a coin dropped in the slots 3 is guided from the slots 28.

30 is a plate which forms a pivoted coin guide, it being pivoted at 31 to the ends of the frame 27. This plate is adapted to guide the coin after it passes through the slots 28 down into the slots of the disks.

32 is a spring one end of which is connected to the guide plate 31 and the other to the side of the casing whereby the plate is held normally in position to guide the coin in its proper path. The lower end of this plate extends down close to the periphery of the disks and, preferably, the coin slots in the disks are of such a depth that a portion of the coins project beyond the periphery of the disks when they are in position. It is therefore, necessary to move this plate out of the path of the coins when the disks are rotated to test the same. It is to permit of this movement that the guide is hinged.

33 designates a rod which is formed of a main portion of sufficient length to extend from one end of the shaft 6 to nearly the other and is secured to the shaft out side of the side frames 4. The ends 34 of the rod 33 are bent inwardly at right angles and preferably and as shown, pass through openings in the shaft and are engaged in position by means of the nuts 35. The ends 34 of the rod are of such a length that its main portion 33 will pass over the tops of the magnets and close thereto in order to knock off the magnets any slugs which may be held thereon, by the magnetic attraction.

36 is a wing cam mounted on the rod 33 at a corner and this wing cam is adapted to engage a projecting end portion 37 of the hinged guide 30. The hinged guide being of sufficient length to extend outside the side frame and is provided with slots 38 whereby the guide may straddle said side frames. From this, it will be seen that the wing cam 36 will move the guide out of the path of the coin held between the disks in the testing operation and will also move the guide out from in front of the magnets so that the rod 33 can remove a slug held by the magnets.

39 is a chute extending from the casing 1 and located in such a position as to catch any slug knocked off the magnet or a slug which is bent in the operation of the testing jaws.

40 is an arm mounted on the shaft 6 and adapted to contact with the stops 41 mounted on the side frame, whereby the revolution of the shaft on the operation of the handle in one direction and spring in another, is limited to a half revolution. The arm on the shaft is so positioned in relation to the stop that when it is against the lower stop in its normal position and held there against by the spring, the slots in the disks will be direct under the coin slots in the cover so any coin dropped through the slot in the cover will fall into the corresponding slot in the pair of disks.

In the operation of my device, the parts being in their normal position, a token may be dropped through the proper coin slot 3 and will pass down through the corresponding slot 28 and will be guided by the movable guide 30 adjacent to the end of one of the magnets 23. If the token is not composed of iron, it will pass by the magnet without being attracted. If, however, it is of iron, it will be caught by the magnet and held with the upper edge of the token extending above the upper surface of the plate 26. If, however, the magnets do not stop the token, then it drops down into the slots in the disks 8 and 10. When now, the handle 7 of the shaft is turned, all of the fast disks 8 turn therewith and if the token is of the proper hardness, it will be sufficient to cause the loose disk of the pair engaging the token to move with the fast disk against the tension of the spring 20 and the two disks will be revolved together carrying the token between them. This rotation will continue until the arm 40 engages the upper pin 41 when the parts will be in the position shown in Fig. 4. The striking of the arm 40 against the pin 41 will cause the coin to be released and dropped out of the tester down into the bottom of the device where it may pass on to any suitable coin controlled mechanism. If, however, the token is not of standard hard-

ness, then when the shaft is turned, the spring 20 will offer sufficient resistance to the rotation of the loose disk to cause the token to be twisted out of the grip of the slots in the disks and the token will fall on to the chute 39 and will be delivered out of the testing machine without the loose disk turning.

The stop 17 in the peripheral slot 16 of the loose disk is so located with respect to the pin 15 on the adjacent fast disk that the fast disk can turn forward without moving the loose disk. If, however, the loose disk is moved by a token of proper hardness, then it will be carried around and the pin 15 and stop 17 will be in such relation that upon the return movement of the shaft, the pin 15 will immediately engage the stop and return the loose disk to its normal position, ready to receive the next token. As soon as it has been returned, the end of the spring 20 engaging the notch 19, will hold the same in position to receive the next token.

While I have described what I believe to be the preferred form of my invention, I desire to have it understood that many changes may be made in the form, construction and arrangement of parts, and other elements may be substituted for those here shown and described, for the purpose of carrying out the function of the elements therein shown and described, without departing from the spirit of my invention, and that wherein I use the term "means", this term is to be understood as covering all forms of mechanism which are capable of performing the function ascribed to the term in the claims.

What I claim as new and desire to secure by Letters Patent is:—

1. In a coin testing machine, the combination with a plurality of pairs of jaws, each pair being adapted to hold a coin between them, of means for subjecting one jaw of each pair to a resistance sufficient to bend anything of less hardness than the coin to be tested and means for moving all the jaws not subject to tension simultaneously whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

2. In a coin testing machine, the combination with a plurality of pairs of jaws, each pair of jaws being provided with slots in their adjacent faces adapted to receive a coin between them, of means for subjecting one of each pairs of jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested and means for turning all the jaws not subject to tension simultaneously, whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

3. In a coin testing machine, the combination with a shaft, of a pair of jaws spaced apart and mounted on said shaft, one of said jaws being fast on said shaft and the other being loosely mounted thereon, means for subjecting the jaw which is loose on said shaft to a resistance sufficient to bend anything of less hardness than the coin to be tested and means whereby the shaft may be rotated whereby a coin or token held between the jaws will either move the jaw subject to tension or be bent.

4. In a coin testing machine, the combination with a shaft, of a plurality of pairs of jaws mounted on the shaft, one of the jaws of each pair being fast on the shaft and the other loose thereon, means for subjecting the latter one of each pair of jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested and means whereby the shaft may be rotated to rotate all the jaws fast thereon whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

5. In a coin testing machine, the combination with a shaft, of a pair of jaws mounted on said shaft, one of said jaws being fast and the other loose thereon, said jaws being adapted to hold a coin between them, means for subjecting said loose jaw to a resistance sufficient to bend anything of less hardness than the coin to be tested, means whereby the shaft may be turned to rotate the jaw not subject to tension whereby the coin or token held between the jaws will either turn the jaw not subject to tension or be bent and means fast on the shaft and adjacent to the loose jaw adapted to return the jaw to its normal position after it has been moved therefrom by a coin.

6. In a coin testing machine, the combination with a shaft, of a pair of disks mounted on the shaft adapted to hold a coin in them, one of said disks being fast on the shaft, and the other loose, means for subjecting the loose disk to a resistance sufficient to bend any coin of less hardness than the coin to be tested, means whereby the shaft may be turned to turn the disk not subject to tension whereby the coin or token will either turn the jaw subject to tension or be bent, a disk mounted on the shaft adjacent to the loose disk and a connection between said last mentioned disk and the loose disk whereby the loose disk will be returned to its normal position upon the return of the shaft.

7. In a coin testing machine, the combination with a shaft, of a plurality of pairs of jaws mounted on the shaft each pair of jaws being adapted to hold a coin between them, one of each of said pairs of jaws being loose on said shaft and the other fast thereon, the loose jaw of one pair being adjacent to the fast jaw of the adjacent pair, means for subjecting the loose jaw to a resistance sufficient to bend anything of less hardness than the coin to be tested, means whereby the shaft may be rotated to rotate all the jaws fast thereon simultaneously whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent, and connections between the adjacent jaws of the adjacent pairs, whereby the fast jaw of one pair will return the loose jaw of the adjacent pair when the same has been moved from its normal position.

8. In a coin testing machine, the combination with a pair of jaws adapted to hold the coin between them, of means for subjecting one of the jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested, means for moving the jaw not subjected to tension whereby the coin or token will either move the jaw subject to tension or be bent, a movable part adapted to form a guide for the coin to the jaws and means for moving said movable part out of the path of movement of the coin in the grip of the jaws.

Signed by me at Baltimore city & State of Md. this 20th day of June 1906.

MORGAN D. SADTLER.

Witnesses:
WILLIAM W. POWELL,
JOHN EMORY CROSS.

J. W. SUTTON.

COUNTERFEIT COIN DETECTOR.

No. 188,982. Patented March 27, 1877.

Fig. 1.

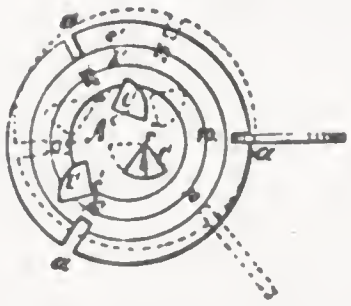


Fig. 2.

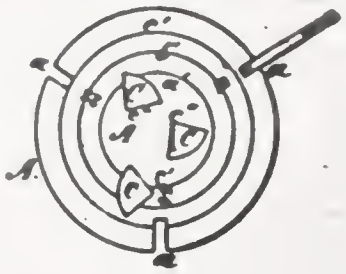


Fig. 3.

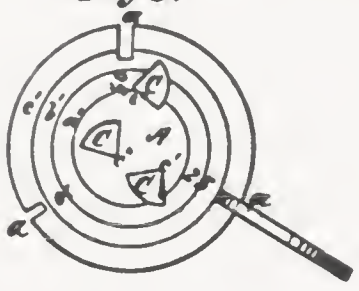


Fig. 4.

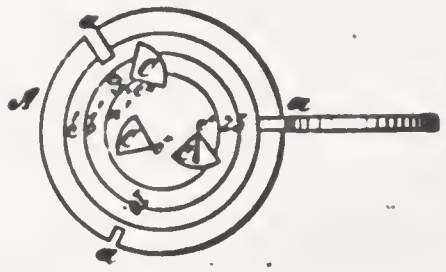


Fig. 5.

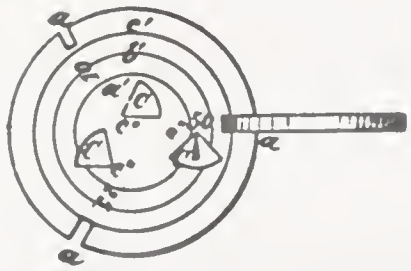
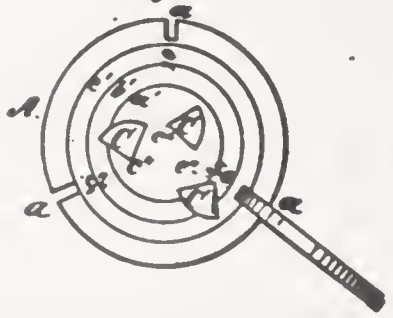


Fig. 6.



Witnesses:
Henry Bilding
E. Lunan Hodby

Inventor:
John W. Sutton
per James McIntosh.
Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN W. SUTTON, OF NEW YORK, N. Y.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. 188,982, dated March 27, 1877; application filed February 28, 1877.

To all whom it may concern:

Be it known that I, JOHN W. SUTTON, of the city, county, and State of New York, have invented an Improved Counterfeit-Coin Detecter, of which the following is a specification:

The object of this invention is to provide a simple means for detecting base or clipped coin; and it comprises, first, in a counterfeit-coin detecter, a weighing-disk constructed with bearings for a knife-edge whereon the device may be fulcrumed in testing the weight of coin, and with receivers for holding the coin in proper relation with the knife-edged bearing, so that full weight will be indicated by the downward tilting of the coin, and light weight indicated by the upward tilting of the latter.

The invention also comprises, in combination with the feature just herein first specified, gage-notches or graduated receivers, serving not only to hold the coin while being weighed, but also to gage the thickness thereof, so that any variation from the true standard will be made manifest.

Figure 1 is a side view of a counterfeit ten-cent-coin detecter made according to my invention, showing the same as operating with a coin of true or standard weight, and Fig. 2 is a like view, showing the same as operating with a coin of light weight. Fig. 3 is a view corresponding to Fig. 1, except that the device is shown in testing a twenty-five-cent coin. Fig. 4 is a view corresponding to Fig. 3, except that the device is shown as testing the thickness of a counterfeit coin. Figs. 5 and 6 correspond to Figs. 1 and 3, except that the device is represented as testing a true fifty-cent coin.

A is a circular disk, of metal, in the circumference of which are provided a number corresponding to the collective number of denominations of coin to be tested, of slots or recesses *a*. One of these recesses, marked 10, is of a width equal to the thickness of a standard ten-cent coin, and of a depth sufficient to retain said coin when inserted edgewise therein. In like manner the receivers, marked, respectively, 25 and 50, have a width, respectively, corresponding to the thickness of a standard twenty-five-cent and fifty-cent coin, and serve, in like manner, to retain the coins in place when inserted therein edgewise.

It will be seen from this that if a counterfeit or sweated coin is attempted to be inserted into one or the other of these receivers, a too great thickness of such coin will prevent its entering the receiver, while a too great thinness will be perceptible by the lack of tightness of the coin in such receiver.

On one side or flat surface of the disk A may be provided the circular lines a' b' c', a' having a diameter equal to that of a standard ten-cent coin; b', equal to that of a standard twenty-five-cent coin, and c' equal to that of a standard fifty-cent coin. By placing one or the other of such coins within its appropriate circular mark on the disk A, any variation from the true diameter of the standard coin is at once made manifest, and the sweated or bogus character of the coin made evident.

Adjacent to each of the receivers *a* is an angular opening, *c*, the angular corners c'' of which is capable of receiving a knife-edge. Each of the openings *c* is arranged in such relation with its adjacent receiver *a*, that when the knife-edge is inserted, as just described, the weight of a suitable coin inserted in said adjacent receiver will cause the weight of the coin to more than balance the weight of the disk, the knife-edge serving as a fulcrum; whereas, should the coin be too light, as is common with bogus or sweated coin, the weight of the disk will counterbalance that of such coin and move the same in an upward direction, thereby making manifest the light and counterfeit or sophisticated character of such coin.

For example—when a ten-cent coin is inserted in the receiver *a*, marked 10, the disk being balanced on a knife-edge inserted in the adjacent angular opening *c*, as shown in Fig. 1, the weight of the coin will turn the parts into the position indicated in dotted outlines in said Fig. 1; whereas, should the coin be light or bogus, it will be moved in the opposite direction, and its bad character thus made manifest. So, also, in case a twenty-five-cent coin is inserted in the receiver *a*, marked 25, the disk supported on a knife-edge, in the same manner as explained, the true or stand-

ard coin will turn downward, as indicated in Fig. 3, and the similar result happens when a fifty-cent coin is inserted into the receiver *a*, marked 50, as represented in Figs. 5 and 6.

It is, of course, to be understood, that by making the receivers *a* of suitable gage, the circular lines *a' b' c'* of suitable diameter, and the angular openings *c* in proper relation with the receivers *a*, the invention can be adapted to the testing of coins for any country, standard, or value.

It is, of course, to be understood, that the knife-edge may be most conveniently furnished by the blade of a pen-knife, or other suitable device, it being only required that a sufficient support or fulcrum should be provided, on which the disk may turn, as hereinbefore explained. It is, moreover, to be observed, that the invention, as herein set forth, constitutes a pocket implement which may be carried in the pocket with the same ease and convenience as the coins which it is designed to weigh, thereby enabling the same to be used under all circumstances and exigencies with ease, convenience, and dispatch.

What I claim as my invention is—

1. The coin-detecter constructed with the receivers *a* and the angular openings *c*, arranged in relation thereto, substantially as and for the purpose herein set forth.

2. The receivers *a*, having a gaged or graduated width coincident with the thickness of the coin to be tested, and provided in relation with the angular opening *c*, substantially as and for the purpose herein set forth.

JOHN W. SUTTON.

Witnesses:
EDWARD HOLLY,
H. WELLS, Jr.

UNITED STATES PATENT OFFICE.

JOHN WIARDA, OF GREEN POINT, NEW YORK.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. 188,712, dated March 20, 1877; application filed February 22, 1877.

To all whom it may concern:

Be it known that I, JOHN WIARDA, of Green Point, in the county of Kings and State of New York, have invented a new and Improved Coin-Detecter, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a side view of my detecter when a genuine coin is placed thereon. Fig. 2 is a sectional side view of the same when the coin is taken off. Fig. 3 is a plan or top view of the same with the coin on.

Similar letters indicate corresponding parts.

This invention consists in the combination, with a coin-supporting platform, of a knife-edged support, a balance-weight, and a stop, the coin-supporting platform being provided with gages which control the correct position of different coins, so that when the platform is placed in a horizontal position on a table or other support, and a genuine coin is placed against the gages provided for such coin, the platform retains its horizontal position; but if a base coin is substituted for the genuine coin, the platform is tipped up and the coin slides off from the same. With the balance-weight is combined an adjusting-screw, so that the same can be readily brought in the correct position.

In the drawing, the letter A designates a platform, which is provided in its middle with a knife-edged support, *a*, and at one end with a stop or leg, *b*. Near this end of the platform are two pairs of lugs, *c c d d*, the lugs *c c* forming gages for fifty-cent pieces, and the lugs *d d* for twenty-five-cent pieces. Below the platform A is situated a balance-weight, *e*, which can be adjusted by a set-screw, *f*. In the example shown in the drawing this weight is inclosed in a chamber or case secured to the under surface of the platform, and said weight rests on the bottom of this case; but it is obvious that the balance-weight may be combined with the platform in any desirable manner.

When my detecter is placed on a horizontal surface, and the platform is brought in the position shown in Fig. 1, if a genuine fifty-cent piece is put on said platform against the gages *c c*, the platform will retain its position, the weight of the coin being just sufficient to keep the leg *b* in contact with the supporting-surface; but if a base fifty-cent piece is substituted for the good coin, the weight of which is less than that of the genuine coin, the platform tips up to the position shown in Fig. 2, and the coin slides off.

The gages *c c d d* are bent over in the form of hooks, leaving just room for the introduction of a genuine coin. If a coin is made of base metal, and of equal weight and diameter with a genuine coin, its thickness must be slightly increased, so as to produce the required weight. A coin of this kind finds no room beneath the gages *c c d d*, and its base nature is immediately detected. If desired, the capacity of my detecter can be readily increased for three or four different kinds of coins, such as silver dollars, half-dollars, quarters, and ten-cent pieces.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, with a coin-supporting platform, A, of a knife-edged support, *a*, a stop or leg, *b*, and a balance-weight, *e*, the platform being provided with gages which control the correct position of the coin to be tested, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 14th day of February, 1877.

JOHN WIARDA. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.

J. WIARDA

COUNTERFEIT COIN DETECTOR.

No. 188,712. Patented March 20, 1877.

Fig. 1.

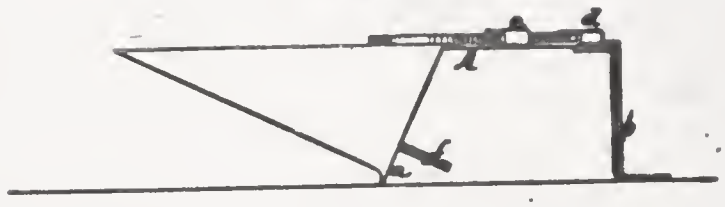


Fig. 2.

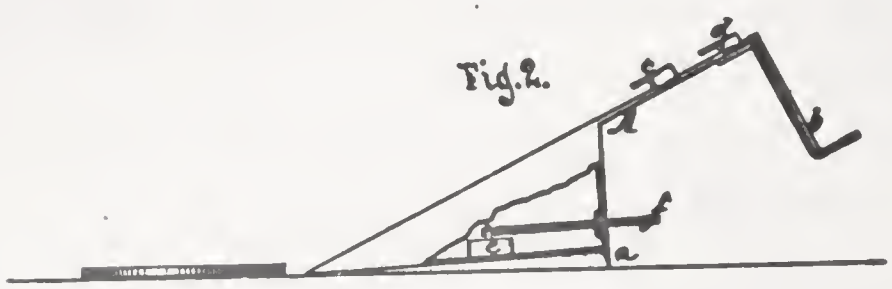
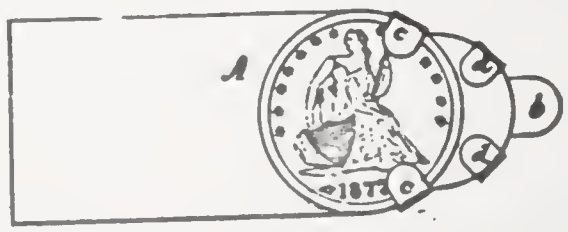


Fig. 3.



Witnesses

Otto Hufeland.

James G. Wright, Jr.

Inventor.

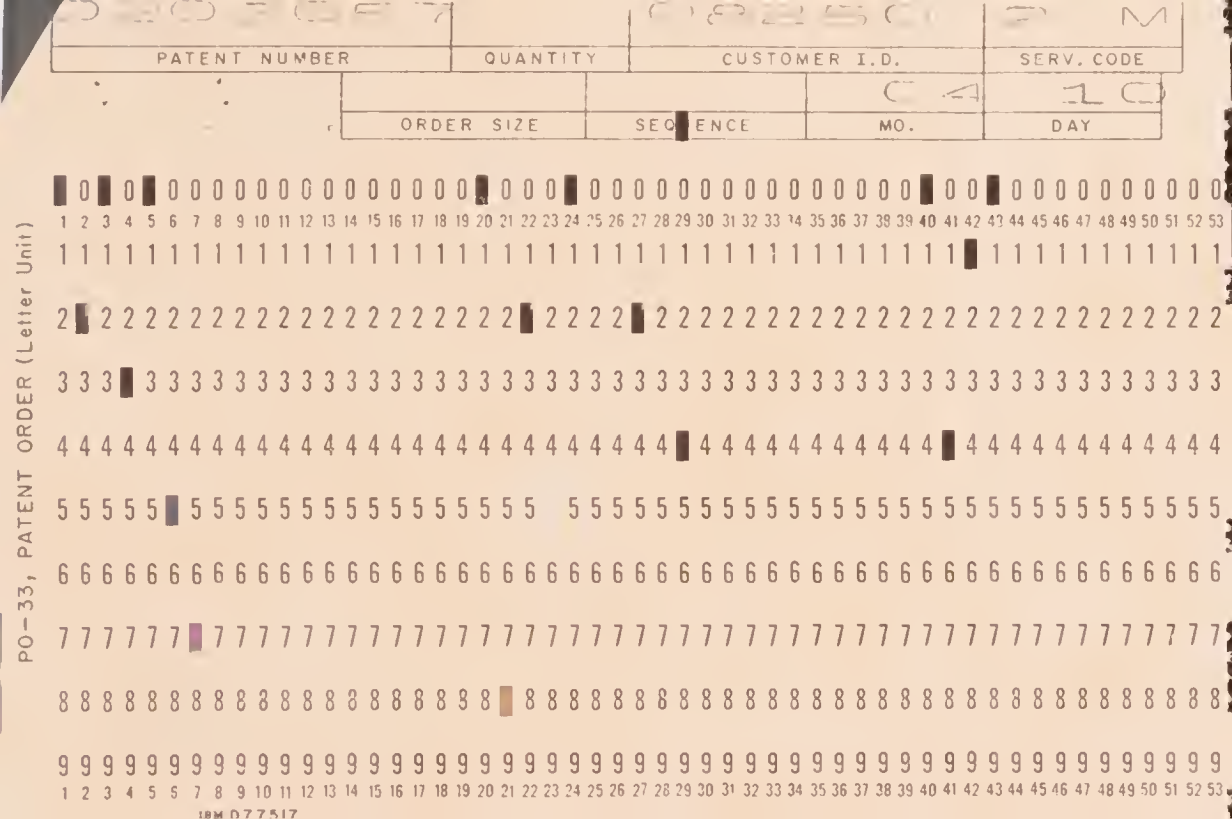
John Wiarda

by

Van Santvoord & Hauff

his attorneys.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.


PATENT NUMBER
QUANTITY
CUSTOMER I.D.
SERV. CODE
ORDER SIZE
SEQUENCE
MO.
DAY
PO-33, PATENT ORDER (Letter Unit)
IBM D27517

H. MARANVILLE.

Postal-Scale and Counterfeit-Coin Detector.

No. 203,057. Patented April 30, 1878.

Fig. 1

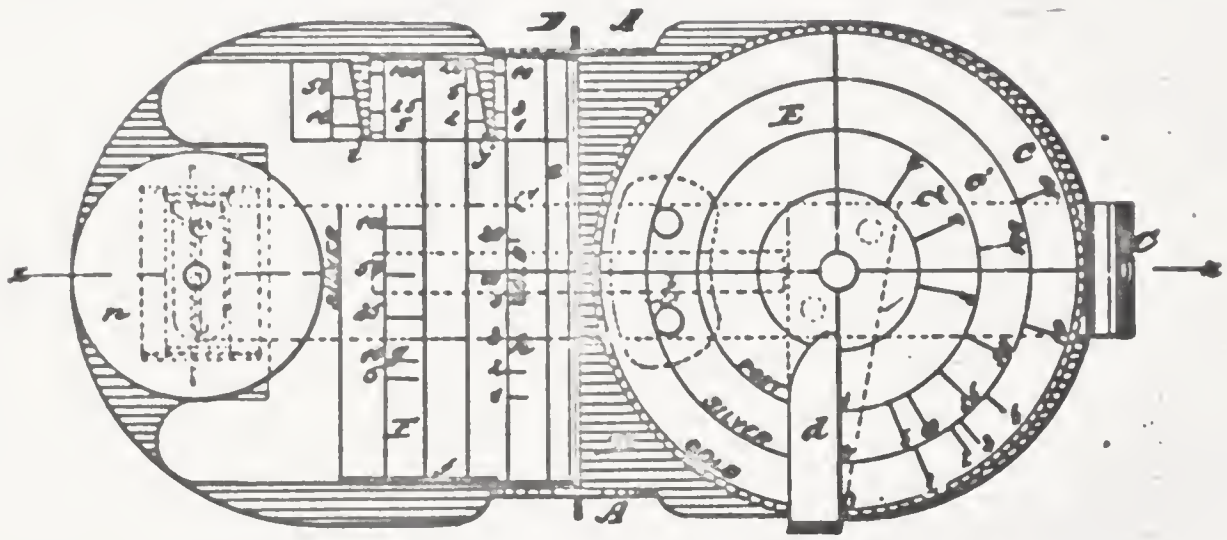
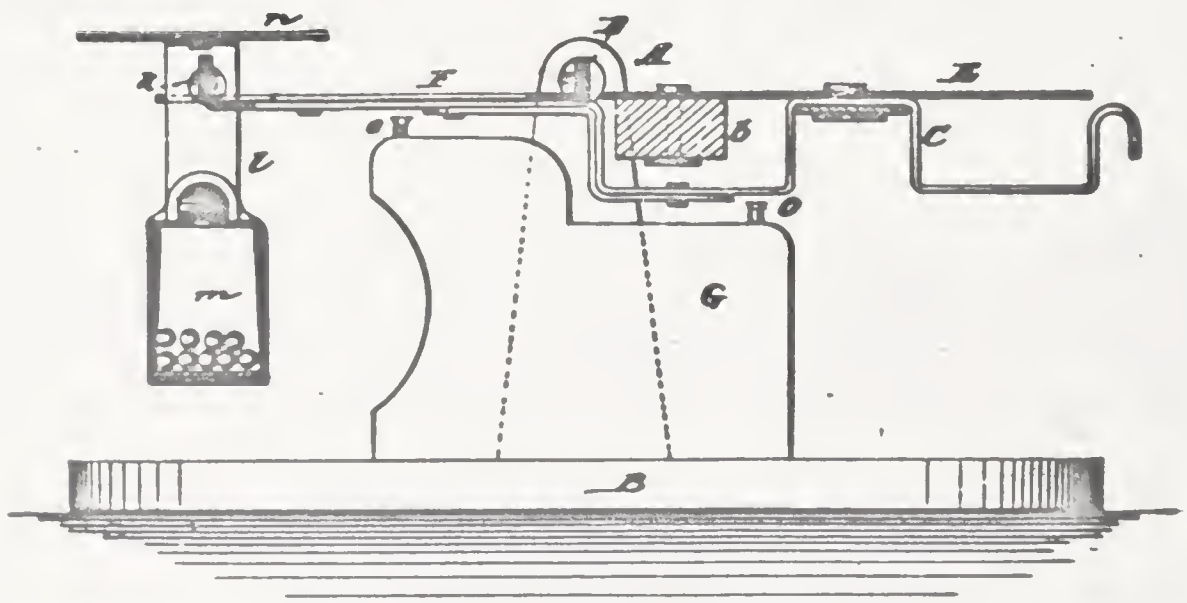


Fig. 2.



WITNESSES:

Francis. McArdle.

C. Sedgwick

INVENTOR:

H. Maranville

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HARVEY MARANVILLE, OF AKRON, OHIO, ASSIGNOR TO HIMSELF AND SAMUEL D. STEWART, OF SAME PLACE.

IMPROVEMENT IN POSTAL-SCALE AND COUNTERFEIT-COIN DETECTER.

Specification forming part of Letters Patent No. 202,057, dated April 30, 1878; application filed March 7, 1878.

To all whom it may concern:

Be it known that I, HARVEY MARANVILLE, of Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Scales, of which the following is a specification:

Figure 1 is a plan view of my improved scales. Fig. 2 is a longitudinal vertical section.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide scales for testing coin and weighing small articles, more especially coin and mail matter; and it consists in a beam having upon one end a graduated rotating disk, which carries the counterpoise, and upon the other end a scale for measuring the diameter and thickness of coin, and a pivoted platform for receiving the coin or packages to be weighed.

Referring to the drawing, A A are standards projecting perpendicularly from the base B, and C is a beam attached to a cross-bar, D, the edges of which are V-shaped and have a bearing in apertures in the standards A.

A disk, E, is pivoted to the beam C, and carries on its under surface a weight, *b*. The beam is bent or offset to permit of turning the disk, and the upper face of the disk is provided with three sets of graduations—one set for gold, one for silver, and one for mail matter.

The outer circle, *c*, on the disk is graduated for gold, the first gradnation being for one dollar, the second for two and one-half dollars, the third for five dollars, the fourth for ten dollars, the fifth for twenty dollars, and so on. The second circle, c^1, is graduated for silver, the first graduation being for five cents, the second for ten cents, and so on. The third and inner graduation, c^2, represents weights corresponding to certain rates of postage, the first or zero graduation representing a package having a weight requiring one three-cent stamp, the second graduation representing a weight that requires two three-cent stamps, the third three three-cent stamps, and so on.

An arm, *d*, is attached to the beam C, and extends over the upper face of the disk E, and serves as an index in adjusting the disk. Upon the opposite side of the cross-bar D there is a plate, F, which is provided with two lips, *e f*, against which to place the coin in measuring the diameter. The lip *e* is riveted to the bar D, and the lip *f* is at right angles to it.

Upon the face of the plate F there are two sets of graduations—one set, *g*, for silver coin, and the other set, *h*, for gold coin. The graduations for silver coin range from five cents to one dollar, and graduations for gold coin range from one to twenty dollars.

In the edges of the plate F, opposite the lip *f*, two V-shaped notches, *i j*, are formed. The notch *i*, which is for the measurement of the thickness of silver coin, is graduated for five, ten, twenty-five, fifty cents, and one dollar. The notch *j* is graduated for the measurement of the thickness of gold coin, the graduations being for coins ranging from one to twenty or fifty dollars.

The end of the beam C projects upward through a notch in the outer edge of the plate F, and to it is riveted a bar, *k*, whose upper edge is V-shaped. A stirrup, *l*, having apertures for receiving the ends of the bar *k*, is supported by the said bar, and has attached to it, below the pivot, a box, *m*, for containing shot or sand for adjusting the scale and for keeping the stirrup in a vertical position. A disk, *n*, is attached to the upper end of the stirrup, for receiving coin or other articles to be weighed.

When it is desired to weigh an article, the disk E is turned until the proper graduation appears at the indicating-bar *d*, when the weight *b* will be in the proper position to counterbalance the article. Coin is measured as to thickness by the V-shaped notches *i j*, and its diameter is measured upon the scales *g h* by placing them against the lip *f*.

A block, G, is placed under the beam C, and in it there are two screws, *o*, one each side of the bar D, for limiting the motion of the beam.

The advantages claimed for my improved scale are that it is convenient, simple, and accurate, and, as all of the parts are connected together, none of them can become lost.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In scales, the beam C, having an upwardly-convex middle bend that supports on a pivot the disk E, and concavities on each side that allow the passage of a weight, *b*, as set forth.

2. The combination of the graduated disks E and plates F, supported on beam C, the former having weight *b*, and the latter a stirrup, as and for the purpose specified.

HARVEY MARANVILLE.

Witnesses:

GEO. G. ALLEN,

G. S. SCOTT.

H. MARANVILLE.

Postal-Scale and Counterfeit-Coin Detector.

No. 203,057. Patented April 30, 1878.

Fig 1

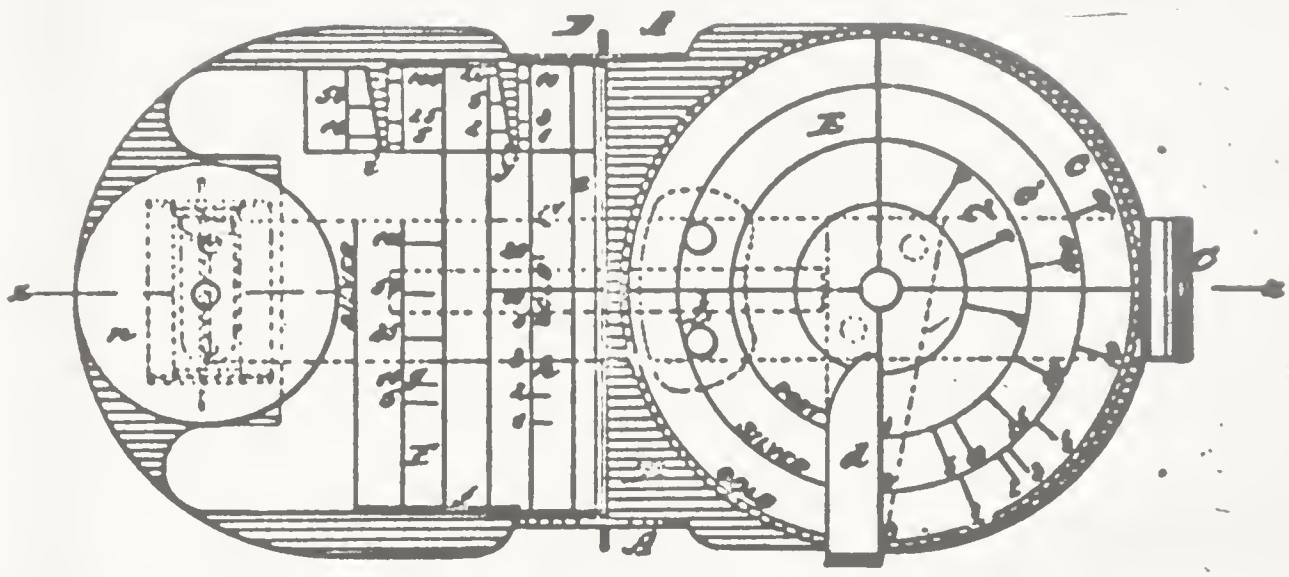
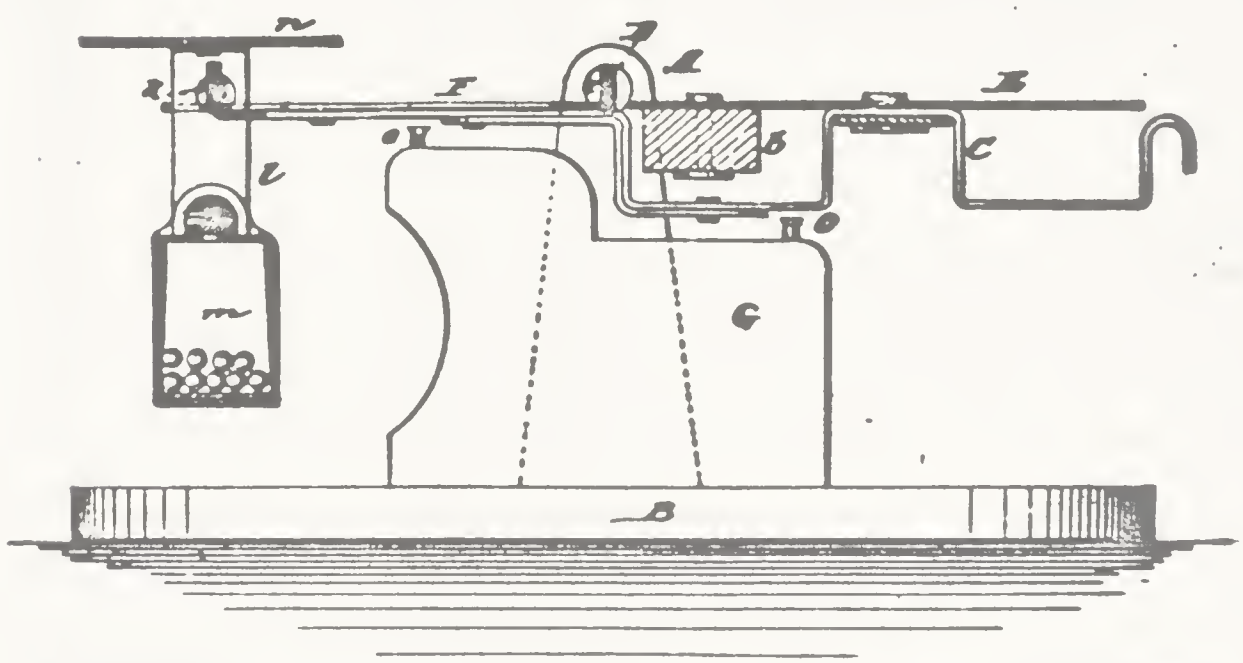


Fig 2.



WITNESSES:

Francis McAuthe.

C. Sedgwick

INVENTOR:

H. Maranville

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HARVEY MARANVILLE, OF AKRON, OHIO, ASSIGNOR TO HIMSELF AND SAMUEL D. STEWART, OF SAME PLACE.

IMPROVEMENT IN POSTAL-SCALE AND COUNTERFEIT-COIN DETECTER.

Specification forming part of Letters Patent No. 202,057, dated April 30, 1878; application filed March 7, 1878.

To all whom it may concern:

Be it known that I, HARVEY MARANVILLE, of Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Scales, of which the following is a specification:

Figure 1 is a plan view of my improved scales. Fig. 2 is a longitudinal vertical section.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide scales for testing coin and weighing small articles, more especially coin and mail matter; and it consists in a beam having upon one end a graduated rotating disk, which carries the counterpoise, and upon the other end a scale for measuring the diameter and thickness of coin, and a pivoted platform for receiving the coin or packages to be weighed.

Referring to the drawing, A A are standards projecting perpendicularly from the base B, and C is a beam attached to a cross-bar, D, the edges of which are V-shaped and have a bearing in apertures in the standards A.

A disk, E, is pivoted to the beam C, and carries on its under surface a weight, *b*. The beam is bent or offset to permit of turning the disk, and the upper face of the disk is provided with three sets of graduations—one set for gold, one for silver, and one for mail matter.

The outer circle, c, on the disk is graduated for gold, the first graduation being for one dollar, the second for two and one-half dollars, the third for five dollars, the fourth for ten dollars, the fifth for twenty dollars, and so on. The second circle, c^1, is graduated for silver, the first graduation being for five cents, the second for ten cents, and so on. The third and inner graduation, c^2, represents weights corresponding to certain rates of postage, the first or zero graduation representing a package having a weight requiring one three-cent stamp, the second graduation representing a weight that requires two three-cent stamps, the third three three-cent stamps, and so on.

An arm, *d*, is attached to the beam C, and extends over the upper face of the disk E, and serves as an index in adjusting the disk. Upon the opposite side of the cross-bar D there is a plate, F, which is provided with two lips, *e f*, against which to place the coin in measuring the diameter. The lip *e* is riveted to the bar D, and the lip *f* is at right angles to it.

Upon the face of the plate F there are two sets of graduations—one set, *g*, for silver coin, and the other set, *h*, for gold coin. The graduations for silver coin range from five cents to one dollar, and graduations for gold coin range from one to twenty dollars.

In the edges of the plate F, opposite the lip *f*, two V-shaped notches, *i j*, are formed. The notch *i*, which is for the measurement of the thickness of silver coin, is graduated for five, ten, twenty-five, fifty cents, and one dollar. The notch *j* is graduated for the measurement of the thickness of gold coin, the graduations being for coins ranging from one to twenty or fifty dollars.

The end of the beam C projects upward through a notch in the outer edge of the plate F, and to it is riveted a bar, *k*, whose upper edge is V-shaped. A stirrup, *l*, having apertures for receiving the ends of the bar *k*, is supported by the said bar, and has attached to it, below the pivot, a box, *m*, for containing shot or sand for adjusting the scale and for keeping the stirrup in a vertical position. A disk, *n*, is attached to the upper end of the stirrup, for receiving coin or other articles to be weighed.

When it is desired to weigh an article, the disk E is turned until the proper graduation appears at the indicating-bar *d*, when the weight *b* will be in the proper position to counterbalance the article. Coin is measured as to thickness by the V-shaped notches *i j*, and its diameter is measured upon the scales *g h* by placing them against the lip *f*.

A block, G, is placed under the beam C, and in it there are two screws, *o*, one each side of the bar D, for limiting the motion of the beam.

The advantages claimed for my improved scale are that it is convenient, simple, and accurate, and, as all of the parts are connected together, none of them can become lost.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In scales, the beam C, having an upwardly-convex middle bend that supports on a pivot the disk E, and concavities on each side that allow the passage of a weight, *b*, as set forth.

2. The combination of the graduated [illegible] E and plates F, supported on beam C, the former having weight *b*, and the latter a stirrup, as and for the purpose specified.

HARVEY MARANVILLE.

Witnesses:

GEO. G. ALLEN,

G. S. SCOTT.

A. J. BAKER & J. W. SIMONTON.

Device for Detecting Counterfeit Coin.

No. 202,691. Patented April 23, 1878.

Fig. 1.

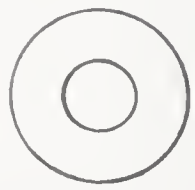


Fig. 2.

Witnesses:
John O'Donoghue
E. H. Bradford

Inventors:
Aaron J. Baker
John W. Simonton
By H. J. Ennis
Attorney

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AARON J. BAKER, OF EDINBURG, AND JOHN W. SIMONTON, OF TAYLORSVILLE, INDIANA.

IMPROVEMENT IN DEVICES FOR DETECTING COUNTERFEIT COIN.

Specification forming part of Letters Patent No. **202,691**, dated April 23, 1878; application filed January 7, 1878.

To all whom it may concern:

Be it known that we, AARON J. BAKER, of Edinburg, in the county of Johnson, and JOHN W. SIMONTON, of Taylorsville, in the county of Bartholomew, all in the State of Indiana, have invented certain new and useful Improvements in Detecting Counterfeit or Spurious Coin and Metals; and we do hereby declare that the following is a full, clear, and exact description of our invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan, and Fig. 2 a sectional view, of the invention.

This invention relates to improvements in devices for detecting spurious gold and silver coins, and in the improved construction of the same, and manner of applying the test, hereinafter more fully described, and particularly pointed out in the claim.

The invention consists of a circular or other suitably-shaped piece of zinc, provided with an opening in the center, the manner of operating the same being to place the test upon the coin to be tested and applying the tongue to the coin through the opening in the center of the piece of zinc, and if the coin is pure, or nearly so, a very perceptible electric shock, accompanied by a decided metallic taste, will be experienced, which shock and taste diminish in intensity in proportion as the coin is alloyed with the baser metals, it being a well-known fact that to produce galvanic action it is only necessary to form what is called a "galvanic circle"—that is, a certain order of substances capable of exciting electricity.

The electrical effects of a simple galvanic circle are in general too feeble to be perceived, except by very delicate tests. However, the tongue and other sensitive parts of the body, being very easily affected, afford a simple and convenient mode of putting the process in operation.

The most convenient shape for a coin-tester of this description is a disk having a central opening, the circular form having no projections to wear holes in the purse or pocket, and the central opening presenting the largest amount of surface in the most convenient manner for the purpose specified.

In this test, although the quantity of electricity set in motion is very small, it is quite sufficient to produce very considerable effects; hence the great desirability and convenience of the above manner of testing coins, involving no complicated balances or delicate instruments of any kind, it being easily operated by a child, or even those people deprived of sight, who could not use any of the tests ordinarily applied in such cases.

Having thus described our invention and the process involved of testing coins, what we claim as new and useful, and desire to secure by Letters Patent, is—

A coin-tester consisting of a disk of zinc having an opening in the center, substantially as and for the purpose specified.

In testimony that we claim the foregoing as our own we hereby affix our signatures in presence of two witnesses.

AARON J. BAKER.
JOHN W. SIMONTON.

Witnesses:
ROBERT W. MEDKIRK,
PETER A. CANARY.

LIB. CO. PHILA.
1750 POCKET ALMANAC
ORIGINAL SIZE
4/4

A TABLE *of the Value and Weight of Coins, as they now paſs in* Pennſylvania.

	Value. £.	s.	d.	Leaſt Weight dwt.	gr
ENgl. Guineas at	1	14	0	5	6
French Guineas	1	13	6	5	5
Moidores - - -	2	3	6	6	18
Johannes's - - -	5	15	0	18	8
Half Johannes's -	2	17	6	9	4
Carolines - - -	1	14	0	6	5
Dutch or Ger. Ducat.	0	14	0	2	4
French milled Piſtoles	1	6	6	4	4
Spaniſh Piſtoles	1	7	0	4	6
Arabian Chequins -	0	13	6	2	3
Other Gold Coin, *per Ounce* - - -	6	5	0		
French Silver Crowns	0	7	6	17	6
Spaniſh milled Pieces of 8. - - - - -	0	7	6	17	6
Other good coined Span. Silver, *per Ounce*	0	8	6		

The Proportion of Gold to Silver, in *England* is, as ☾ : 1 : : ☉ : 15 1/2

1 Ounce Troy of Gold (22 Car.) is worth Sterling £. 3 17 8 1/2

1 Ounce Sterling Silver, 0 5 2

H. MARANVILLE.

Coin Detector.

No. 27,140.

Patented Feb 14, 1860.

Fig 2

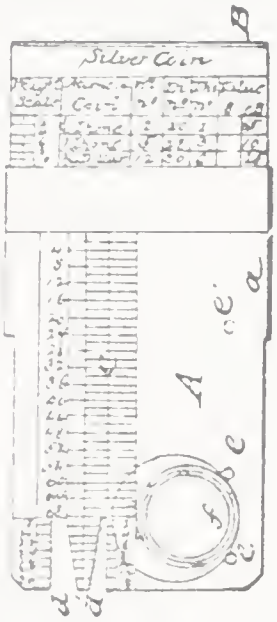


Fig 3

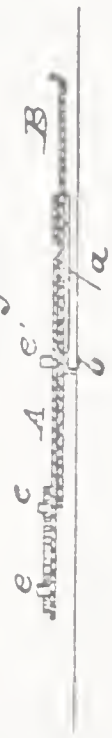
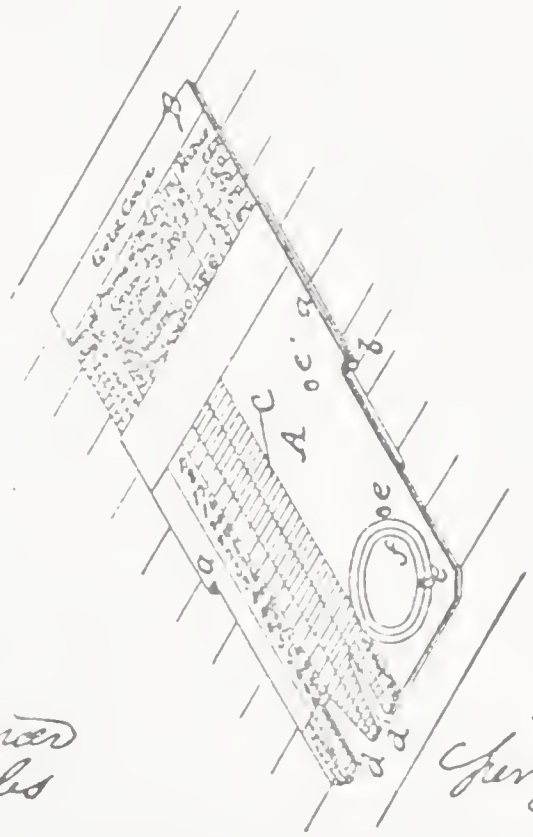


Fig 1



Witnesses

P. S. Spencer

J. W. Combs

Inventor

H. Maranville

per Munn & Co Attorneys

UNITED STATES PATENT OFFICE.

H. MARANVILLE, OF CLINTON, OHIO.

COIN-DETECTOR.

Specification of Letters Patent No. 27,140, dated February 14, 1860.

To all whom it may concern:

Be it known that I, H. MARANVILLE, of Clinton, in the county of Summit and State of Ohio, have invented a new and Improved Coin-Detector; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1, represents a perspective view of my invention, arranged for testing gold coin. Fig. 2, is a plan or top view of the same, arranged for testing silver coin. Fig. 3 is a longitudinal vertical section of the same.

Similar letters of reference in the three views indicate corresponding parts.

This instrument is designed for testing the weight and the dimensions viz: diameter and thickness, of gold and silver coin, and my invention consists in combining a slide marked with suitable scales with a plate which is furnished with two knife edges on its under side and with two projections above in such a manner that the standard weight of a certain coin placed against the two projections on the upper side of the plate turns the same on the above named edges, and raises the slide, when the latter is drawn out to a certain point which is marked to correspond to the coin in question, said plate being also furnished with a scale to test the diameter, and with incisions or notches to test the thickness of various coins, the whole being so arranged as to make a new and improved article of manufacture.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a plate of sheet-brass or any other suitable material, the edges *a* of which are turned over for a little less than one half the length of the plate, so as to form guides for a slide B. Each of the edges *a* is also turned down so as to form the two knife edges *b* which are so situated that a line drawn through them, divides the plate in two unequal parts, leaving that part to which the guides *a* are attached, the lightest. The upper surface of the plate A is marked with the diameter scale *c* which is obtained by dividing two inches into 64 parts or degrees, $\frac{1}{32}$ of an inch each and numbered from the inner end of the scale toward the outer edge of the plate.

On the outer end of the plate A are two incisions *d*, *d'*, one half inch deep, each, to form the scale of thickness. These incisions are tapering, and they are so formed that the inner end of the largest incision *d* is equal in width to the outer end of the smallest incision *d'*, both together in fact forming one continuous incision of one inch in depth. The large end of the incision *d* is $\frac{19}{110}$ or $\frac{38}{220}$ of an inch wide, and the small end of the incision *d'*, is $\frac{3}{220}$ of an inch in width. The whole space from the small end of the incision *d'*, to the large end of the incision *d*, is divided into 32 parts, marked with figures from 1 to 32. No. 1, is $\frac{7}{220}$ in width, leaving $\frac{31}{220}$ to be divided into 31 parts of $\frac{1}{220}$ of an inch each, as clearly shown in Figs. 1, and 2, thus making one degree in diameter scale $6\frac{3}{4}$ times as large as one degree in thickness scale. Two studs or pins *e* are secured in the top surface of the plate A, and a circle or a series of concentric circle *f*, indicate the place which the coin has to occupy in order to test its weight as will be hereinafter more fully explained. An extra pin *e'* is inserted into the plate at a greater distance from its outer edge for the purpose of testing slug, or any other coin too heavy to be tested between the studs *e*.

The slide B which moves quite easy between the guides *a*, is marked on both sides with different scales. One side is intended for gold and the other for silver coin, and each side is divided lengthwise into 7 columns. The first column is for the weight scale and it is marked "Wt. scale" over head and numbered from the head downward, 2, 4, 6, 8 etc. The second column is for the names of coin, and it is marked accordingly, over head. The third column is for the numbers of the first column, corresponding to the weight of the different coins, the names of which are marked in the second column, and it is marked Wt. No. (weight number) over head. The fourth column is for the numbers of the diameters as taken from the scale *c* or the plate A, and it is marked "Di. No." overhead. The fifth column is for the thickness numbers, taken from the numbers on the sides of the incisions *d d'*, to correspond to the thickness of the different coins, and it is marked Th. No. over head. The sixth and seventh columns are for giving the value of each coin in dollars and cents, and they are marked $ and cts. over head. By having one genu-

ine coin of each kind, the different columns can easily be filled out, and the size of the instrument is such that it gives room for all the known coins of the civilized world.

The manipulations necessary to test a certain coin by my instrument will be best understood by one or two examples. The first and most necessary thing, especially in testing silver coin, is to try the sound or "jingle" of the coin, for there, are some spurious coins purporting to be silver which are composed mostly of lead or other base metal, the specific gravity of which is nearly the same as silver. If the "jingle" is bad, the coin need not be tested any further; it is spurious; but any of the metals generally used to give the coin "jingle" will be detected by the instrument, as all those metals are lighter than silver. But to proceed further, if a quarter dollar is to be tested, and its "jingle" is found to be good, its weight is first tested. That side of the slide B, marked "Silver coin" is turned up and the slide is pulled out until the weight number (12) found on the third column and opposite to the name of the coin (quarter dollar) comes exactly in line with the inner edge of the plate A. The coin is now placed on the plate, so as to touch both the studs *e*, as shown in red outlines in Fig. 2, and if the weight of the coin is correct, it will gently raise the slide B, turning the outer edge of the plate down. This will not be the case, if the coin is spurious and too light. If the weight of the coin is found to be correct, its diameter is tested by placing it on the plate A, so that its edge is precisely on the line drawn across said plate near to its inner end. The opposite edge of the quarter dollar, if the coin is good, will correspond with the mark 30, on the scale C. In the same manner the thickness of the coin is tested by placing it edgewise into the incision *d'*, and if the coin is good, it will enter this incision exactly to the mark 6, on its side. One more example will be sufficient to make the use of my instrument clear to everybody. Suppose a 5 dollar gold piece is to be tested, and the slide is turned over so as to bring that side marked "gold coin" on the top. The weight of the coin is now tested in the same manner as above described, and if the slide is drawn out to the number 16, on the weight scale, and the 5 dollar piece is placed, against the studs *e* it will gently raise the slide, if its weight is correct. The diameter of the coin and its thickness is now tested in the same manner as above described, and if the coin is good the diameter will be found to be 28, and its thickness 6 as marked in the corresponding columns on the slide.

It must be remarked that the thickness and the diameter of the same coins varies to some extent. My instrument is marked according to the latest standard coins of the various denominations, and at the same time the diameter scale is in such relation to the thickness scale, that one degree more on the one gives one degree less on the other, in order to retain the same weight so that my instrument can be used also for coins which vary from those coins which served in marking the instrument.

What I claim as new and desire to secure by Letters Patent, as a new article of manufacture, is,

The arrangement of the plate A with the diameter scale *c*, and incisions *d*, *d'*, and with knife edges *b*, in combination with the slide B, marked on one side for gold, and on the other side for silver coins, as herein described, and operating in the manner and for the purpose specified.

H. MARANVILLE.

Witnesses:
CHAS. RINEHART.
W. M. HEFIELMAN.

Fig 1

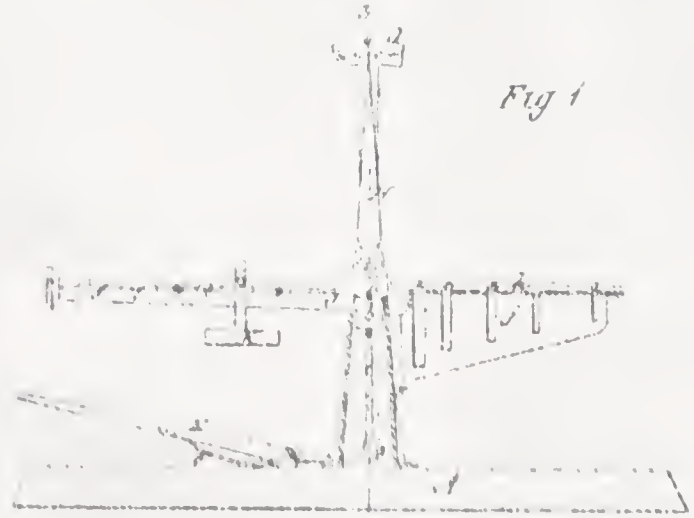
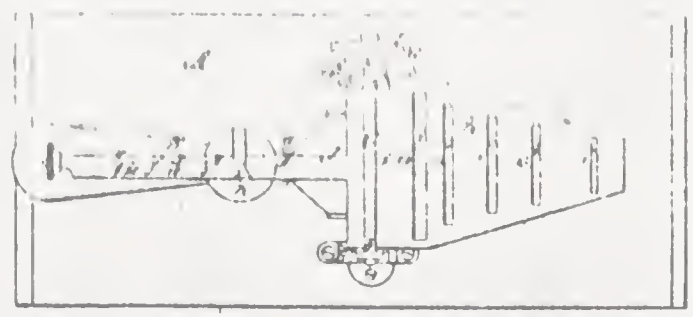


Fig 2

Fig 3.



UNITED STATES PATENT OFFICE.

FERDINAND J. HERPERS, OF NEWARK, NEW JERSEY.

BALANCE FOR DETECTING COUNTERFEIT MONEY.

Specification of Letters Patent No. 18,973, dated December 29, 1857.

To all whom it may concern:

Be it known that I, F. J. HERPERS, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Implement or Device for Detecting Counterfeit Gold Coin, and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of my improvement, *x*, *x*, Fig. 2, showing the plane of section. Fig. 2, is a transverse vertical section of ditto, *y*, *y*, Fig. 1, showing the plane of section. Fig. 3, is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists of a new article of manufacture, viz., a coin balance, constructed substantially as hereinafter described.

To enable others skilled in the art to make and use my invention I will proceed to describe it.

A, represents the base of the implement, and B, B, are two uprights attached to the base.

C, C, represent two vertical rods which are placed at the inner sides of the uprights B, B, one to each. The lower ends of these rods are connected to the ends of a horizontal rod D, which is attached to the inner end of a lever E, said lever being pivoted at *a*, to the base A, and having a spring F, underneath it, the spring keeping the outer end of the lever elevated, and consequently the inner end depressed.

To the upper ends of the rods C, C, rectangular blocks *b*, *b*, are attached. These blocks *b*, fit in the uprights B, B, which are constructed of metal and bent or formed of three sides so as to serve as guides for the blocks—see Figs. 1 and 3. The blocks *b*, *b*, are also constructed of metal and have each a triangular opening or bearing *c*, made through them to receive the ends of a bar G, which are made in triangular or knife-edged form, similar to the pivots of all scale beams. To one end of the bar G, an index H, is attached and a vertical bar I, is suspended to said bar near the index H, the lower end of the bar I, being heavier than its upper part so that it will be retained in a vertical position, and the upper end of said bar having a segment *d*, attached to it with a vertical mark *e*, made at its center—see Fig. 1.

To the bar G, the scale beam J, is attached. One end or part, *f*, of this scale beam is graduated or has small holes *g*, made in it to receive the point of a weight K, said holes being made in the beam at proper points and numbered corresponding to the different denominations of U. S. gold coin, see Fig. 3. The opposite end of the scale beam is formed of a plate *h*, having slots *i*, made in it, said slots corresponding in length and width to the several U. S. gold coins, see Fig. 3. To the under side of the plate *h*, a vertical plate *j*, is attached, said plate being slotted vertically, the vertical slots corresponding in width to the slots *i*, and being in line with them, see Fig. 1.

The knife-edged ends of the bar G, fit in V-shaped notches *k*, in the upper ends of the uprights B, B, when the implement is not in use—the ends of the bar being kept in the notches *k*, by the spring F. By this means the bearings and knife edges of the bar G, are kept in order or prevented from being injured by unnecessary wear.

The implement is used as follows. Suppose a $2½ gold piece is to be tested. The coin is placed in the slot marked 2½ in the plate *h*, said coin also fitting in the slot in the plate *j*, directly in line with the slot in the plate *h*. If the coin fits snugly in these slots it is of proper dimensions. The outer end of the lever E, is then depressed and the blocks *b*, are elevated so that the bearings *c*, are raised above the upper ends of the uprights B, B, and the ends of the bar G raised above or out of the notches *k*, in the upper ends of the uprights B, B. The scale beam J, then rests in the bearings *c*, and the point of the weight K, being placed in the point marked 2½ on the end or part *f*, of the scale beam, the coin will more than counterbalance the weight and the index H, will be moved to the right of the mark *e*, on the segment *d*, and the coin is proved to be genuine.

Counterfeit coin, if of the same size as the genuine ones are necessarily lighter, because the alloy is of less specific gravity than gold. If a spurious coin be of the same weight as a genuine one, the spurious coin

will necessarily be larger, consequently by measuring and weighing the coin spurious ones may be readily detected.

I have graduated the scale beam so that new genuine coins will more than counterbalance the weight K, in order to allow for a deficiency in weight occasioned by wear, but the wear will never be so great as to prevent genuine coins from exactly balancing the weight and causing the index to be at the point *x* on the segment. If a coin be not sufficiently heavy to do this, it is spurious.

I have practically tested the above described machine as follows: I took two pieces of gold, one being 21⅔ carats U. S. standard, and the other 18 carats. These two pieces I worked into wires exactly of the same thickness. The piece of 21⅔ carats, I made of the same weight as a half-eagle or $5 gold piece. The piece of 18 carats wire was then cut so as to correspond exactly in size with the wire of 21⅔ carats. I then weighed the two pieces of wire and found the wire of 18 carats to be 18 grains lighter than the one of 21⅔ carats, thereby showing a difference of 3⅔ grains on the dollar. If, therefore, an allowance of one grain on the dollar be made for the wear of gold coin, to which extent it probably will not wear, as only the projecting surfaces are exposed, the implement will detect base coin made of as good a quality or of as fine gold as profit would permit.

I am aware that there is in some coins a small difference in size owing to the different degrees of pressure given it by coining, but this difference is so minute, and the difference between the genuine coin and 18-carat gold so great, being after a deduction of one grain on the dollar for wear) 2⅔ grains, that a well constructed implement will detect any base coin. The accuracy, therefore, of an implement for the purpose of detecting base coin is important, and by having the implement constructed or arranged as shown so that the beam is not allowed to rest in its bearings when not in use, the bearings are kept in perfect order, being subjected to wear only when the implement is used.

I am aware that implements have been previously invented for effecting the same purpose as the one herein described. I therefore do not claim detecting spurious coin by weight and measurement irrespective of the construction of the implement as described, but to the best of my knowledge and belief, it is new in balances of this description to arrange the knife edges as herein described, so that the knife edges can only come in contact with their bearings at the moment of weighing.

I do not claim to be the inventor of sliding or movable supports for the knife edges, as this feature is seen in jewelers' scales, apothecaries' scales, etc. But in all of these, it will be found that the knife edges rest upon their bearings when the scales are not in use. Consequently every concussion or jarring in the apartment or building injures the knife edges and bearings, and after a time the scales become inaccurate. This can never happen in my improvement, because the knife edges never come in contact with their bearings, except when the lever is pressed, and they wholly separate and are held steadily apart when the lever is released. It is also new to have vertical pockets of the exact size of the coins, upon the fulcrum bar, which pockets serve as measures of the dimensions of the pieces of money, and also indicate the exact spot where the coin is to be placed by the operator. I do not, however, claim, broadly, the placing of gages or receptacles upon balances. But no balances have ever been arranged with a number of vertical pockets in close proximity. The apparatus is thus made very compact and highly convenient.

I do not claim to be the inventor of swinging index bars for weighing machines; and therefore I disclaim the same as used in my apparatus. Their employment is not essential as my instrument can be made and used either with or without the same, as may be desired.

No coin balance like mine has ever been known or used, to the best of my knowledge and belief. It is therefore a new article of manufacture, and possesses useful qualities not seen in any other analogous article.

I claim and desire to secure by Letters Patent, as a new article of manufacture.—

A coin balance when constructed as herein described.

FERDINAND J. HERPERS.

Witnesses:

JAMES F. BUCKLEY,

W. TUSCH.

G. B. SMITH.

Coin Tester.

No. 9,997. Patented Sept. 6, 1853.

Fig. 1.

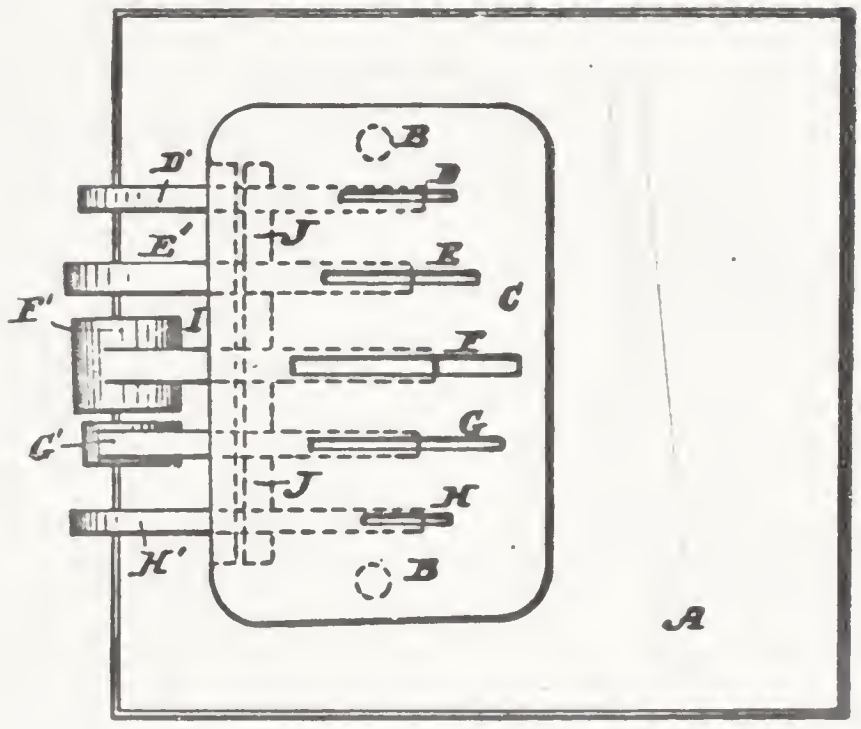
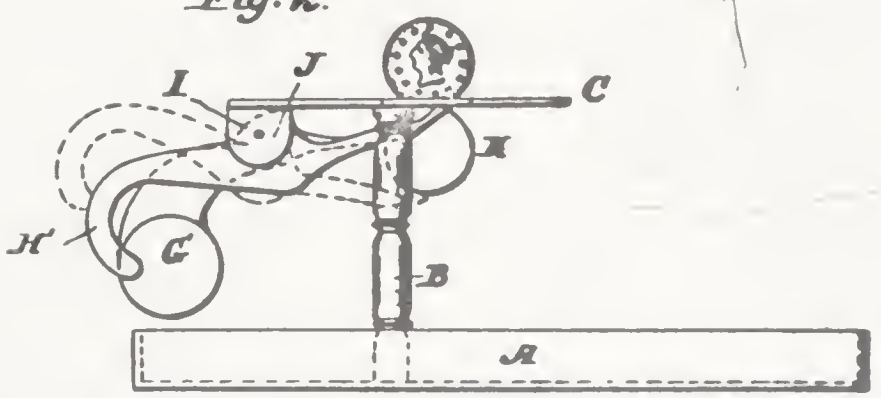


Fig. 2.



UNITED STATES PATENT OFFICE.

GIDEON B. SMITH, OF BALTIMORE, MARYLAND.

COUNTERFEIT-COIN DETECTOR.

Specification of Letters Patent No. 9,997, dated September 6, 1853.

To all whom it may concern:

Be it known that I, GIDEON B. SMITH, of the city of Baltimore, in the State of Maryland, have invented a new and useful Apparatus for Proving Genuine Gold Coin and Detecting Spurious Coin and for Such other Purposes as It may be Adapted: and I do hereby declare that the same is described and represented in the following specification and drawings.

The nature of my invention consists in a gage or hole just large enough to permit the genuine coin to pass through arranged in combination with a lever acting below said gage, balanced so that the weight of such coin will depress it so as to let said coin slip down through said gage which is too small to allow any spurious coin to pass which is larger than the genuine; the lever being so balanced that any coin lighter than the genuine will not be heavy enough to depress it so that all spurious coin whether too large or too light will stop in the gage, while the genuine will slip through and fall out below.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation referring to the drawings above mentioned in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan, and Fig. 2, an elevation.

A is the base in which the two posts B B are fastened which support the gage plate C fastened to the top of said posts and provided with five slots adapted to five American gold coins as follows: D to two and a half dolls., E to five dolls., F to twenty dolls., G to ten dollars, and H to one dollar pieces. These slots are just large enough to permit the genuine coins of the respective denominations slip through freely onto the levers D′, E′, F′, G′ and H′ arranged to vibrate under each of the slots or gages respectively, as they are depressed by the coins put into the gages: and the rear ends of each of these levers which project out behind the gage plate C are made so heavy that anything lighter than the genuine coin which may be put into the gages will not be heavy enough to depress the ends under the gages; consequently all spurious coins which are larger than the genuine will be detected by the gages, and all such coins as are lighter than the genuine will be detected by the levers, if they are small enough to slip through the gages: while the genuine coin will slip freely through the gages and depress the levers so as to fall off and allow the levers to return to their places. These levers all vibrate on the rod I which passes through them and through a series of projections J J, &c., on the under side of the gage plate provided for that purpose. The red I. projections J J, ends of levers which are under the gage plate and the position of the posts B B are all represented by dotted lines in Fig. 1.

In Fig. 2, a one dollar gold coin is represented as being put into the slot H through which it passes to the position represented by the circle K depressing the lever H′ to the position represented by the dotted lines, when the gage no longer supports the coin and it falls off of the lever, so that it resumes its place against the gage plate, ready to receive another coin.

I contemplate that a gage plate with one or more levers may be fixed in the top of a counter over a drawer or other receptacle for money: also that an inclined plane may be arranged below the levers on which the money may slide after it falls off of the levers to its desired destination, also that one or more gages with a lever or levers may be arranged in porte-monnaie or articles for carrying money in the pocket.

What I claim as my invention and desire to secure by Letters Patent is—

A gage or hole just large enough to permit the genuine coin to pass through: arranged in combination with a lever acting below said gage, balanced so that the weight of such coin will depress it so as to let said coin slip down through said gage which is too small to allow any spurious coin to pass which is larger than the genuine: the lever being so balanced that any coin lighter than the genuine will not be heavy enough to depress it: so that all spurious coin whether too large or too light will stop in the gage, while the genuine will slip through and fall out below substantially as described.

GIDEON B. SMITH.

Witnesses:
B. T. F. DULANY,
EDWD. G. STARR.

H. G. Robinson.

Balance Scales.

No. 9,844. Patented Jul. 12, 1853.

Fig. 1.

Fig. 2

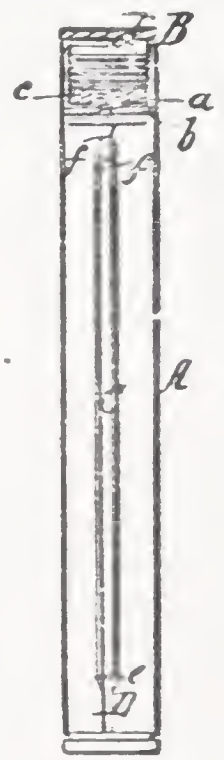
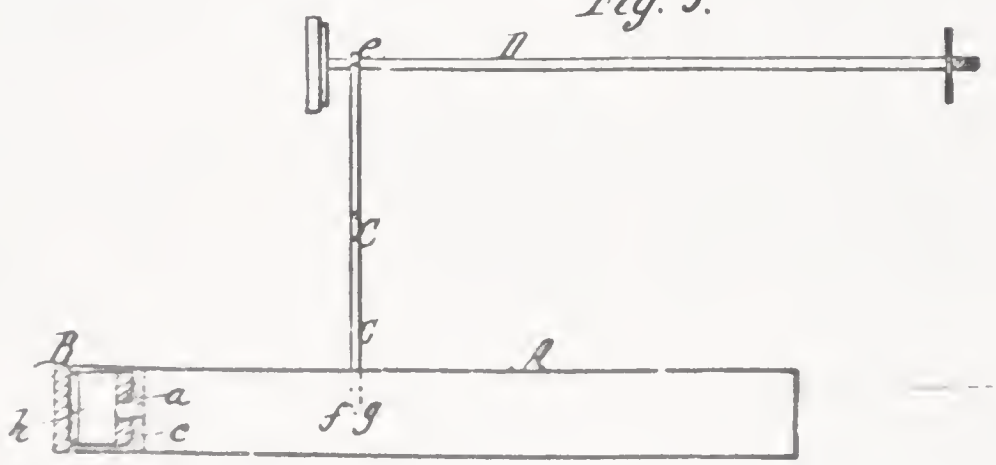


Fig. 3.

Fig. 4.

Fig. 5.



UNITED STATES PATENT OFFICE.

H. G. ROBINSON, OF SCHUYLKILL HAVEN, PENNSYLVANIA.

COIN SAFE AND DETECTOR.

Specification of Letters Patent No. 9,844, dated July 12, 1853.

To all whom it may concern:

Be it known that I, HENRY G. ROBINSON, of Schuylkill Haven, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Implement for Detecting Counterfeit Coin, said implement also serving as a portable receptacle for money, both coin and bank notes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is an external view of the implement, represented as closed. Fig. 2, is a longitudinal vertical section of ditto, taken through the center. Fig. 3, is a detached perspective view of the gage and coin receptacle. Fig. 4, is a detached view of the clamps. Fig. 5, is a longitudinal vertical section of the case; the clamps being withdrawn, and applied to the case, for the purpose of weighing the coin, in the receptacle at one end of the case.

Similar letters of reference indicate corresponding parts, in each of the several figures.

The implement consists of a cylindrical case, having, at one end, a gage and receptacle box for coin, which will be hereafter described; the remaining portion of the case incloses a pair of clamps, by which the case is suspended, in order to detect a counterfeit coin by its weight. The portion of the case which incloses the clamps may also contain bank notes. The implement, therefore, may be used, not only as a detector for counterfeit coin, but may also be carried in lieu of an ordinary wallet or pocket-book.

The general construction and arrangement of the several parts of the implement constitute the invention.

A, represents a cylindrical case or tube, having, at one end, a receptacle or gage box, B; Figs. 2, 3, and 5. This box, B, is also cylindrical, and fits within the case, A, and is secured there by a screw, (*a*), attached to a partition (*b*), which screw passes into a female screw, (*c*), in the bottom of the box, B; Figs. 2, 3, and 5. The receptacle or gage box, B, may be sufficiently large or deep to contain several pieces of coin. At the upper or outer end of the box, B, there is a recess, (*d*), cut through and around just one half the circumference of the box; this recess will, consequently admit a coin to be passed through it, as large as the box will contain. The width of the recess must equal the width of a genuine coin of such a size as the box is capable of holding. The remaining portion of the case, A, incloses a pair of clamps, C. These clamps are attached, at one end, to a rod, D, by a pivot, (*e*). The opposite ends of the clamps are provided with points, (*f*), (*f*), see Fig. 4, the use of which will be presently shown. The rod, D, has a screw-thread cut upon it, at one end, which screw-thread passes into the center of the screw, (*a*), as the rod, D, is turned, and the rod and clamps are thereby secured within the case, A.

In order to detect counterfeit coin, the gage box, B, is withdrawn from the case, A. If the coin will pass snugly through the recess, (*d*), into the box, it must of course be of the same dimensions as a genuine coin; and, if a counterfeit, it will be lighter. The clamps, C, are then withdrawn from the case, A; and the small points, (*f*), (*f*), are inserted in fulcrum holes, (*g*), (*g*), one on each side of the case, seen in Fig. 1. These fulcrum holes are placed at certain points in the case, so that, when a genuine coin is in the box, B, and the box adjusted within the case, A, the case, A, will exactly balance or be in equilibrium, when the case is suspended at the fulcrum holes, see Fig. 5; the coin being represented by, (*h*). If a counterfeit coin be of the same weight as a genuine one, it will necessarily be larger, and will not pass through the recess into the box, B. Weighing, in this case, would be unnecessary.

If the receptacle or gage box, B, contains several coins, they must be all removed when a coin is to be tested by weighing; and the coin to be tested should be moistened with spittle, to cause it to adhere to the end of the box, as seen in Fig. 5, as a change of position of the coin would cause great inaccuracy in weight.

Bank notes may be wound around the rod, D, and clamps, C, within the case; and the implement will thus form a convenient receptacle for both coin and bank notes, equally as portable as the ordinary wallet or pocket-book.

I do not claim detecting counterfeit coin by means of a gage and scales, for that is well known; but,

What I claim as new, is,—

The peculiar construction of the imple-

ment, and the manner in which the several parts are arranged; by which construction and arrangement, I combine a portable receptacle for both coin and bank notes, convenient for the pocket, and a counterfeit coin detector, the implement being formed of a cylindrical case, A, having a gage box or receptacle, B, at one end; and the remaining portion of the case inclosing the clamps, C, for the purpose as shown, and otherwise constructed, and arranged, substantially as set forth, in the body of the specification.

HENRY G. ROBINSON.

Witnesses:
WM. CHALMERS,
S. C. STANTON.

H. MARANVILLE.

Coin Tester.

No. 16,390. Patented Jan. 13, 1857.

Fig 1

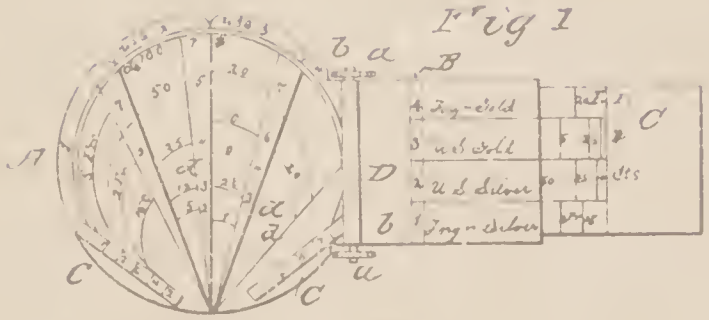


Fig 2

UNITED STATES PATENT OFFICE.

H. MARANVILLE, OF CLINTON, OHIO.

BALANCE FOR DETECTING COUNTERFEIT COINS.

Specification of Letters Patent No. 16,390, dated January 13, 1857.

To all whom it may concern:

Be it known that I, H. MARANVILLE, of Clinton, in the county of Summit and State of Ohio, have invented a new and Improved Implement or Device for Detecting Counterfeit Coins; and I do hereby declare that the following is a full, clear and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a face view of my improvement. Fig. 2 is a side view of ditto.

Similar letters of reference indicate corresponding parts in the two figures.

My invention consists in the employment or use of a graduated disk and slide, connected together and hung upon centers, so as to form a scale beam. The disk has guides attached to its face and the several parts are so arranged that the coin may be weighed and also measured both as regards thickness and diameter, and the implement may be made quite portable so that it may be carried in the pocket with as little inconvenience as an ordinary pocket knife or comb.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a disk or circular plate, to one side of which a projecting plate B is attached. The sides or edges of the plate B are bent downward and underneath the other portion to form guides to receive a sliding plate C which is allowed to work freely in said guides underneath the disk A and plate B. The disk A and plate B may be formed of sheet brass or other metal and both cut out of one piece. The disk A need not much exceed in diameter a silver dollar. The slide C is also formed of a piece of sheet metal. On the plate B at its junction with the disk A, a bar D is secured transversely, and knife edged journals (*a*) are formed one on each side of said bar. These journals (*a*) have their bearings in ears or lugs (*b*) turned up at the end of a bar underneath the plate B. On the face of the disk A there are secured two ledges (*c*, *c*). These ledges are placed in oblique positions near the edge of the disk and form guides against which the edge of the coin to be tested is placed. The disk A has its face graduated as shown in Fig. 1, curved lines being made indicating the diameter of gold and silver coins of different denominations. The different scales are divided by lines (*d*).

The slide C is divided longitudinally into four parts, each part being graduated, one part for silver and another for gold, a part for foreign silver and the other part for foreign gold. The disk and slide are balanced like a scale beam in the bearings in the lugs (*b*) and the weight of the coin on the disk A is counterbalanced by adjusting the slide C.

The implement is used as follows: Take, for instance, a silver dime, and place it upon the disk, A, the edge of the dime being placed against the ledges (*c*) (*c*). Then adjust the slide C, so that the line marked 10 in the part marked "cts.," on the slide will be even with the outer edge of the plate B. If the coin be genuine its edge will be precisely over the line marked 10 in the disk, and the disk and slide will be evenly balanced. The thickness of the coin is indicated by figures on the ledges (*c*), the ledges being of taper or inclined form. It will be seen that by the above implement the coins are weighed and measured, and therefore counterfeit coin may be readily detected. If a spurious coin is of the same weight as a genuine one it must be larger, because any known metal heavier than gold is more valuable and consequently would not be used in combination with other metals for counterfeiting. If a spurious coin is equal in size to a genuine one it will, of course, be of less weight.

The implement is exceedingly simple in construction and may be made quite portable, not exceeding 3 or 4 inches in length.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

The graduated disk A and slide C connected as shown and hung in the curved lugs (*b*), the disk having ledges or guides (*c*) (*c*) attached to its face and the whole arranged as herein shown and described, for the purpose set forth.

H. MARANVILLE.

Witnesses:

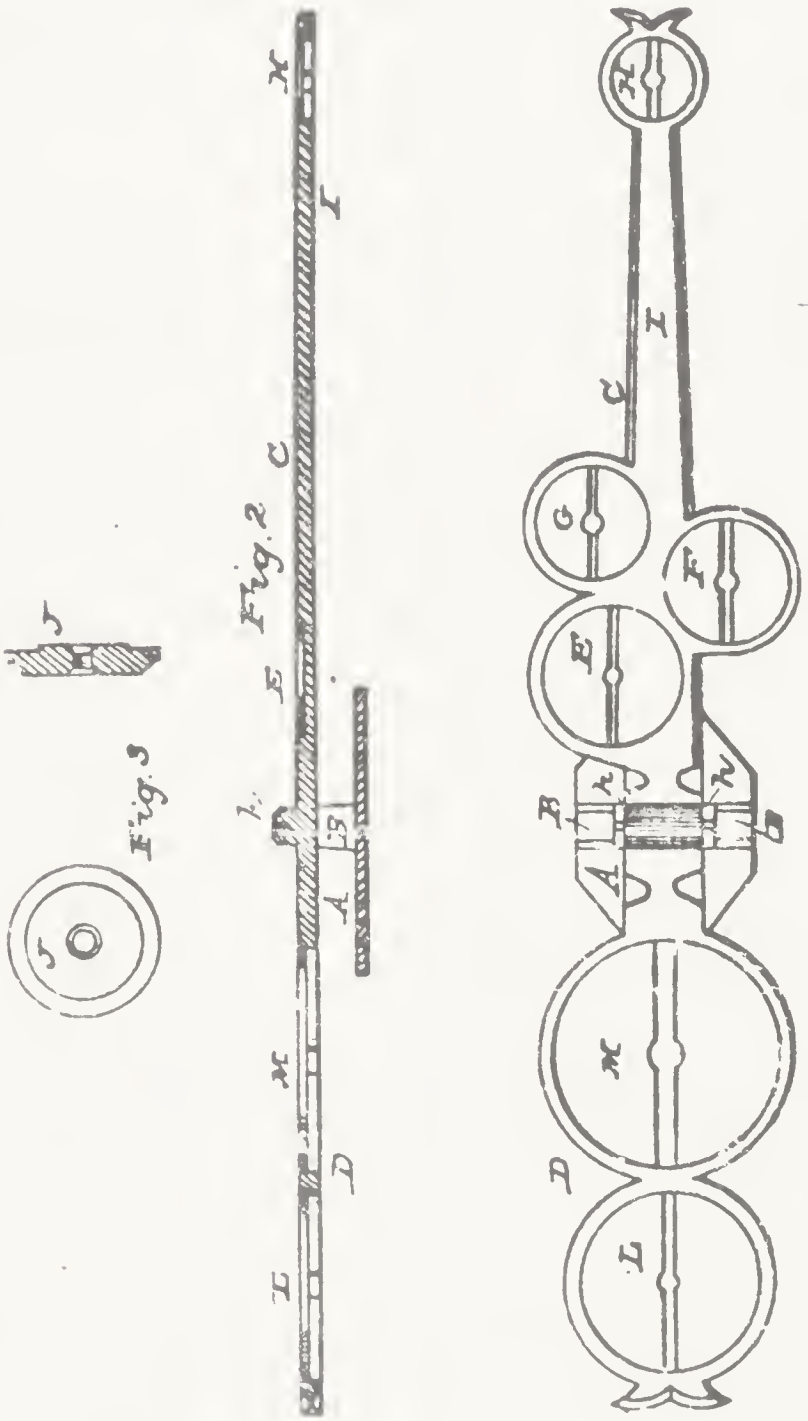
J. F. Coggeshall,

I. I. Wetmore.

J. ALLENDER.

Coin Tester.

No. 13,840. Patented Nov. 27, 1855.



UNITED STATES PATENT OFFICE.

JOHN ALLENDER, OF NEW LONDON, CONNECTICUT.

BALANCE FOR DETECTING SPURIOUS COIN.

Specification of Letters Patent No. 13,840, dated November 27, 1855.

To all whom it may concern:

Be it known that I, JOHN ALLENDER, of New London, in the county of New London and State of Connecticut, have invented a new and useful Apparatus for Proving Genuine and Detecting Spurious Coin; and I do hereby declare that the same is described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan. Fig. 2, a section of Fig. 1, cut through the center. Fig. 3, a plan and section of the weight.

The nature of my invention consists in a lever of a proper size and weight, with a fulcrum a proper distance from its center, which lever is provided with cavities in each arm of a proper size to receive the genuine coin arranged at such distances each side of the fulcrum as to weigh the smaller coins upon the lighter arm without additional weight, and the heavy coins two or more on the heavy arm with one weight, in one position, on the lighter arm.

In the accompanying drawings A is the base of a stand provided with two pillars B B which are perforated to receive the pivots *h h* of the weighing lever C, which may be made in the form represented or such other form as may be desirable, the short arm D being made of sufficient weight to weigh a five dollar gold piece if it is placed in the cavity or countersink E which is made just large enough to receive the genuine coin, or the three dollar gold piece in the cavity F, or the two and a half dollar gold piece in the cavity G, or the one dollar gold piece in the cavity H, all of which cavities are in the lighter arm I. These cavities are all made just large enough to receive the genuine coin and it is weighed without additional weight on the heavier arm. The weight J is made in the form represented and provided with a projection K fitted to the cavity H, and when placed in said cavity the lever C will weigh a ten dollar gold piece in the cavity L or a twenty dollar gold piece in the cavity M, each of which cavities are made just large enough to receive the genuine gold coins of the denomination named, and both of them are in the short and heavy arm of the lever C. There is a slot directly across the center of each of the cavities in which the coin is weighed just large enough to let the genuine coin pass through freely by its own weight so as to prove the coin by its size as well as its weight.

This apparatus can be made and sold cheaper than any other that will perform the same service with the same facility, and will be found a perfect protection to prove genuine and detect spurious coins which are either larger or lighter than the genuine.

I am aware that balances for proving coin have been made with two levers hung upon one fulcrum so arranged as to weigh all the coins upon one side of the said fulcrum, and when the larger coins were weighed the lever in which the small ones are weighed is turned to the opposite side of the fulcrum. Therefore I make no claim to instruments constructed with more than one lever and to weigh upon one side of the fulcrum only, but

What I do claim as my invention and desire to secure by Letters Patent, is—

A single lever of such a size and weight and provided with cavities or countersinks arranged at such distances each side of the fulcrum, as to weigh the smaller coins upon the lightest arm, without additional weight, and the larger coins two or more on the heaviest arm with one weight, in one position on the lighter arm.

JOHN ALLENDER.

Witnesses:

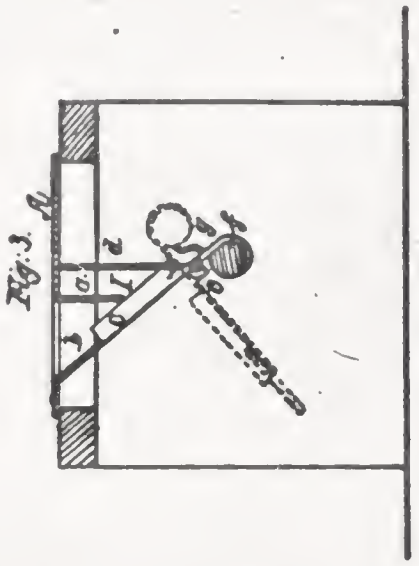
C. PRINCE,

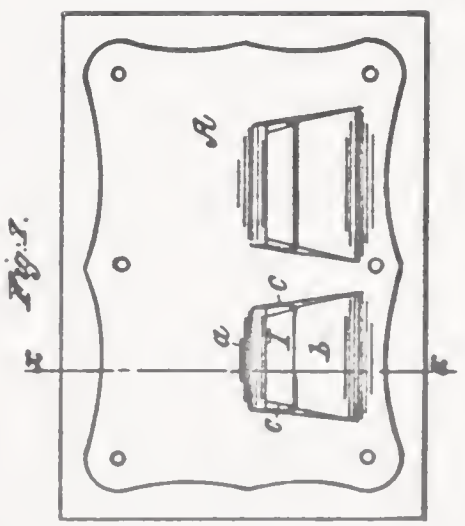
G. C. STILLMAN.

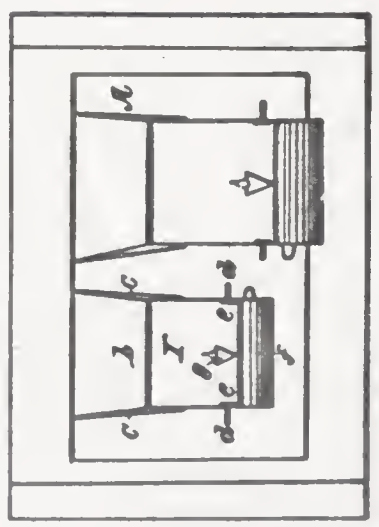
W. PAINTER.

Counterfeit Coin Detector.

No. 35.834. Patented July 8, 1862.







Witnesses:

J. H. Burroughs

W. W. Reed

Inventor:

W. Painter

per Munn & Co

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM PAINTER, OF FALLSTON, MARYLAND.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTORS.

Specification forming part of Letters Patent No. 35,831, dated July 8, 1862.

To all whom it may concern:

Be it known that I, WILLIAM PAINTER, of Fallston, in the county of Harford and State of Maryland, have invented a new and Improved Counterfeit-Coin Detector; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of my invention. Fig. 2 is an inverted plan of the same. Fig. 3 is a vertical section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a counterfeit-coin detector which will admit of being applied to a counter or table directly over a drawer or receptacle and serve as a means for conveying the genuine coin into the drawer, and at the same time serve as a means to detect spurious coin that may be placed into it for the purpose of being passed into the drawer, thereby avoiding any waste of time in testing coin, as is now the case in using the various detectors hitherto devised.

To this end the invention consists in the employment or use of one or more suspended or tilting spouts arranged with gages in such a manner that each piece of coin in its passage through the detector into the receptacle or drawer is weighed and gaged or measured, and any spurious piece, which of course cannot pass these tests, will be detected at once, as it cannot pass into the receptacle or drawer.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a metal plate, which is screwed to the top of the counter or table directly over a receptacle or drawer. This plate is slotted or cut in the form of an H, and the metal, *a*, at the back part of the cut bent down to about a vertical position, the metal, *b*, at the front part of the cut being bent down so as to form an inclined plane at an angle of about forty-five degrees, as shown clearly in Fig. 3.

I is a spout, which may be formed of a plate of sheet metal bent upward at its sides, as shown at *c c* in Fig. 1. The spout I is suspended between two vertical rods, *d d*, which are secured to the under side of the plate A, and are bent toward each other horizontally at their lower ends, and fitted in pendent ears *e e*, attached to the spout I. The spout I is allowed to work freely on the lower ends of the rods *d d*, and is loaded at its back end, as shown at *f*, so as to keep the upper edges of the sides *c c* in contact with the lower edge of *a* and the front edge of the spout in line with the inclined plane *b*, as shown clearly in Fig. 3. The weight *f* is designed to be a trifle lighter than a genuine coin to be tested, and the width of the spout I—that is to say, the space between the sides *c c*—is to be wider than the diameter of the coin, and the space between the bottom of spout I and the lower edge of *a* equal in height to the thickness of said coin. The spout I is provided with a stop or projection, *g*, at its lower part, and the distance between this stop and the lower edge of the inclined plane *b* is equal in diameter to a standard or genuine coin.

The operation is as follows: In order to put the coin in the drawer and test it at the same time, it is placed on the inclined plane *b*, and it slips down by its own gravity into spout I and is stopped by the projection *g*. The coin, being a trifle heavier than the weight *f*, tilts the spout I, as shown in red, Fig. 3, and the coin consequently drops into the drawer, the spout returning to its original position under the action of weight *f* as soon as the coin leaves it. If the coin be not a genuine one, it must be lighter if of the same dimensions, and consequently will be incapable of tilting the spout I, and if it be equal in weight to a genuine one its dimensions must be greater, the diameter being larger, or, if of equal diameter, of greater thickness; hence a counterfeit coin of the standard weight and thickness will be prevented from passing fully down on the spout I, the distance between the spout *g* and the lower edge of *b* being too short to allow it to clear *b* and pass into the spout; and if the spurious coin be of the proper standard diameter it must be thicker, and the space between the bottom of the spout and the lower edge of *a* will not be sufficiently high for it to pass through.

The spouts I may be made of various sizes to suit different-sized coins, and loaded accordingly. The invention, it will of course be seen, is applicable to both gold and silver coin.

I would remark that the pendent rods *d d*

may be allowed to yield or give a trifle under pressure, in order to compensate for the slight variation in diameter of standard coin, produced by the milling of the edges. This variation, however, is so slight that it cannot affect the efficiency of the device as a detector.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The particular arrangement of the horizontal plate A, vertical plate *a*, inclined plane *b*, and spout I, provided with the sides *c c* and stop *g*, and suspended between the pendent yielding rods *d d*, substantially as and for the purpose herein set forth.

WM. PAINTER.

Witnesses:
ROBT. CHALFANT,
EDWD. PAINTER.

No. 39,890. PATENTED SEPT. 15, 1863.

D. CUMMING, Jr.

COIN AND LETTER SCALE.

Fig. 3.

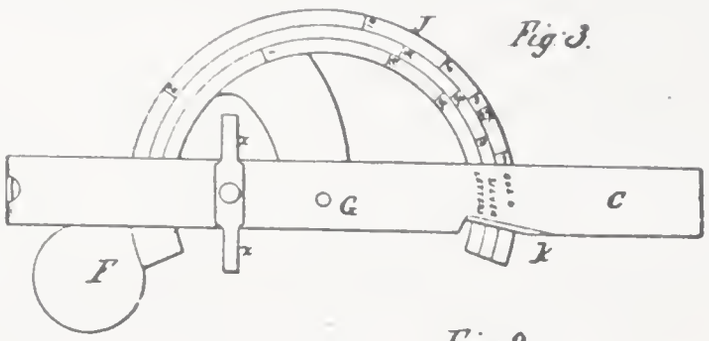


Fig. 2.

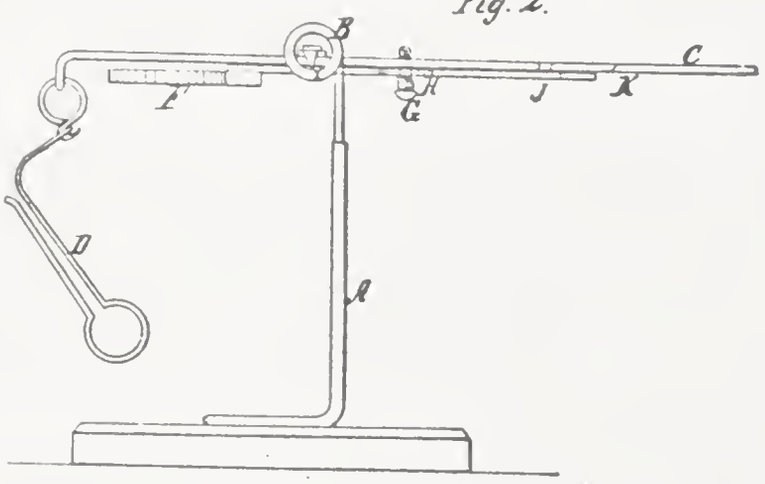
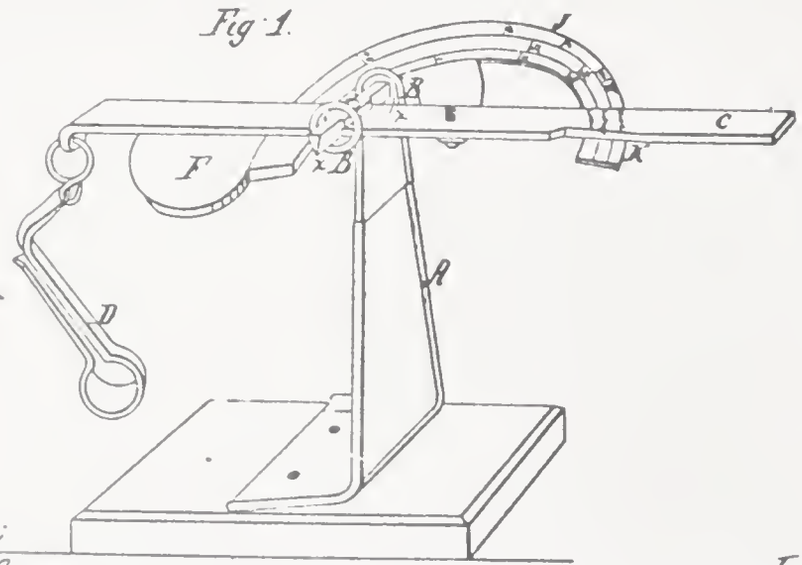


Fig. 1.



Witnesses;

Steph. M. Smith

J. Stubbs

Inventor;

D. Cumming Jr

UNITED STATES PATENT

DAVID CUMMING, JR., OF NEW YORK, N

IMPROVEMENT IN COIN AND LETTER SC

Specification forming part of Letters Patent No. 39,890, dated Septemb
February 2, 1863.

To all whom it may concern:

Be it known that I, DAVID CUMMING, Jr., of New York, county and State of New York, have invented a new and useful Improvement in Coin and Letter Scales; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a longitudinal elevation, and Fig. 3 a horizontal plan of the top.

The same letters refer to corresponding parts in the different figures.

A is the standard, with the bearings B B, on which the knife edges *x x* rest. The knife edges are firmly secured to the beam C, one end of which has the spring holder D swinging freely from it on a knife edge. F is a weight, which is attached to the beam by the pivot G. The weight moves freely on the pivot, and is held where required by the spiral spring H on the pivot. Attached to the weight is the curved plate J, containing the marks and figures of the dem ent coins, and also th dicating an ounce an weighing letters.

Manner of working is placed in the sprin moved around on th the denomination of plate is directly un beam. If the coin is beam will be inclin which the coin hang in the same manner.

The machine has b and can be manufact

What I claim as n by Letters Patent, is—

The pivoted weight operated substantiall the purpose set forth.

Witnesses:
STEPH. WM. S
J. S. TUTTLE.

W. H. RICE.

Counterfeit-Coin Detector.

No. 196,168. Patented Oct. 16, 1877.

Fig: 1.

Fig: 2.

Fig: 3.

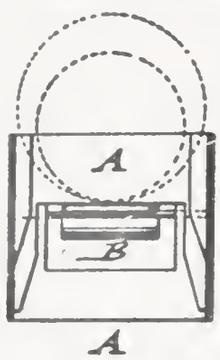


Fig: 4.

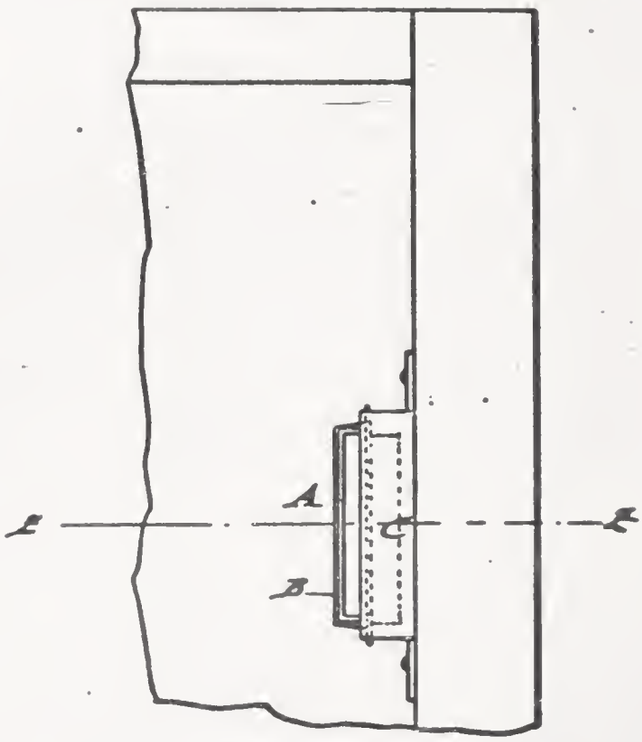
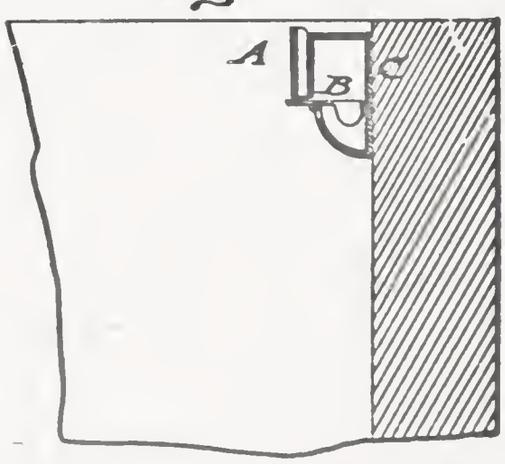


Fig: 5.



WITNESSES:

Chas. Nida

J. H. Scarborough.

INVENTOR:

W. H. Rice.

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. RICE, OF NEW YORK, N. Y.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. **196,168**, dated October 16, 1877; application filed April 23, 1877.

To all whom it may concern:

Be it known that I, WILLIAM H. RICE, of the city, county, and State of New York, have invented a new and Improved Coin-Tester, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view; Fig. 2, a vertical transverse section on line *x x*, Fig. 1; Fig. 3, a vertical longitudinal section on line *y y*, Fig. 2, of my improved coin-tester as adapted for pocket use; and Figs. 4 and 5 are a top view and vertical transverse section of the same on line *z z*, Fig. 4, shown as applied to a money-drawer, counter, &c.

Similar letters of reference indicate corresponding parts.

This coin-tester is intended to form a convenient, compact, and reliable device for pocket use, or for cash-tills, &c., by which the coins are exposed at one and the same time to the double test of weight and measurement, so as to detect at an instant the counterfeit pieces without attracting any attention to the testing of the same.

The invention consists of a coin-tester having one or more guide-tubes gaged in length and width for coins of different denominations, in connection with a fulcrumed and weighted trap-lever gaged to the weight of the genuine coins.

In the drawing, A A represent the tubes for the coins, of which one or more may be arranged above a fulcrumed and weighted trip-lever, B, that extends across the bottom opening of the tubes.

The tubes A are gaged in length and width to the size of the special coins to be tested, and the weight of the trip-lever gaged to the weights of the coins, the tubes for the smaller coins being in front of the tube for the larger coin, so that the increased leverage compensates for the less weight of the smaller coins. The weighted trip-lever is inclosed in a casing, C, so as to be protected and not exposed to injury after being once adjusted. The tester is thereby capable of being carried in the pocket or attached by side flanges to a money-drawer, counter, or other receptacle. The coin to be tested is inserted into the proper tube, and then dropped, the genuine and full-weighted coin passing in without difficulty, and tripping instantly the weighted trip-lever, while the spurious coin, being either too large, is prevented from passing through the tubes, or, when the same is capable of passing into the tube, it is too light to trip the trip-lever, on account of the less specific gravity of the baser alloys, forming thus a twofold test that detects with absolute certainty the counterfeit coins. The test may be used without attracting attention and giving offense to the parties offering the coins, which is of special advantage and less objectionable for use in the trades.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A coin-tester consisting of a series of coin-tubes in which rests one arm of a lever weighted on the other, the coin of different denominations resting upon said arm at different distances from the fulcrum of lever, according to their respective weights, as shown and described.

WILLIAM H. RICE.

Witnesses:

PAUL GOEPEL,

C. SEDGWICK.

E. KRONENBERG.

COUNTERFEIT COIN DETECTORS

No. 195,451. Patented Sept. 25, 1877.

Fig. 1.

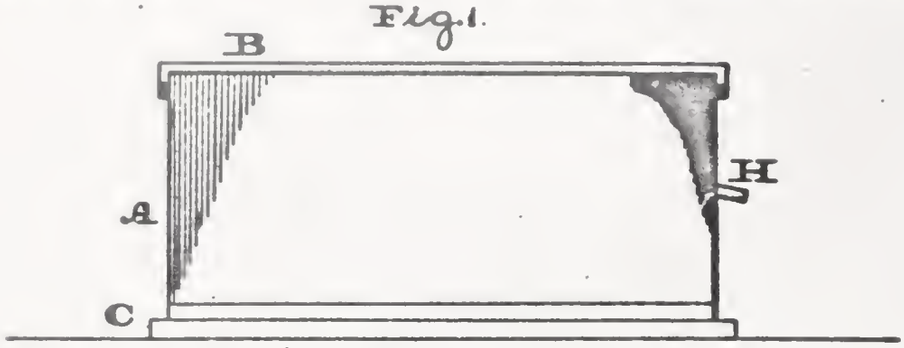


Fig. 2.

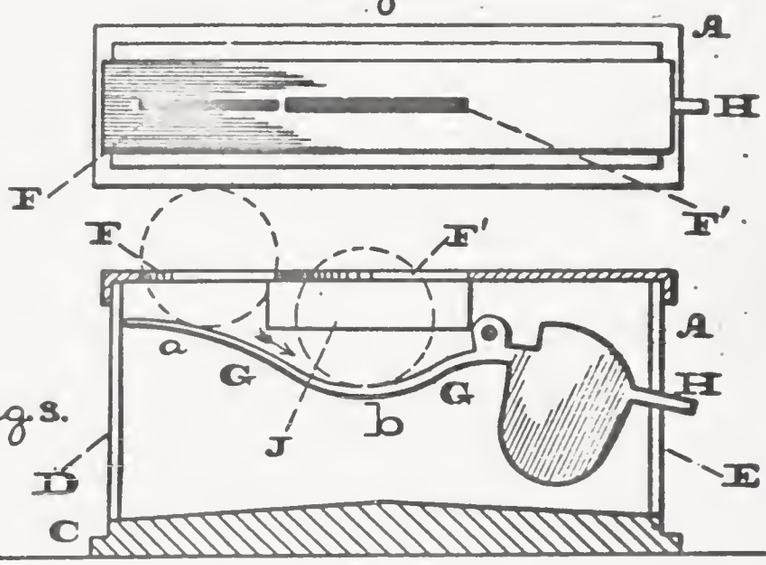


Fig. 3.

Fig. 4.

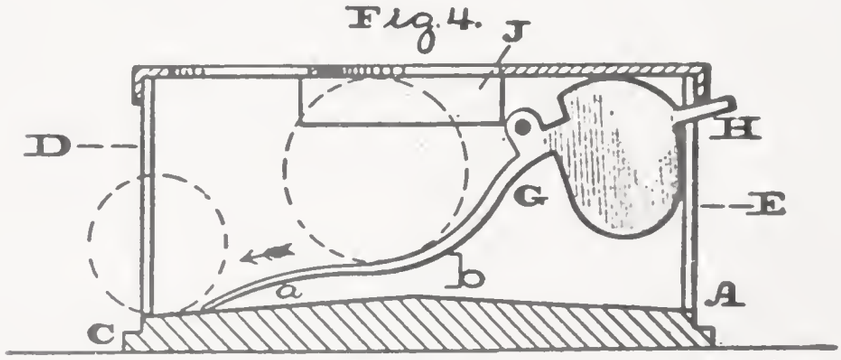
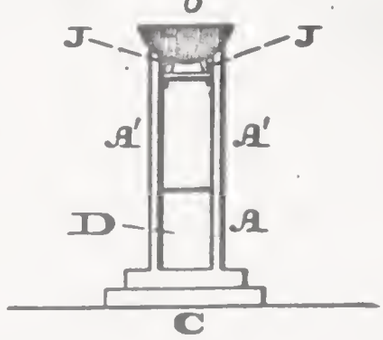


Fig. 5.



Witnesses:

Louis F. Brous!

A. P. Grant.

Inventor:

E. Kronenberg,

by John A. Rodenbeck

Attorney.

UNITED STATES PATENT OFFICE.

EDWARD KRONENBERG, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HORACE BALDWIN, OF SAME PLACE.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. 195,451, dated September 25, 1877; application filed March 2, 1877.

To all whom it may concern:

Be it known that I, EDWARD KRONENBERG, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Counterfeit-Coin Detecters, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the implement embodying my invention. Fig. 2 is a top view thereof. Figs. 3 and 4 are central longitudinal sections thereof. Fig. 5 is an end view thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a case having in its top plate two slots, of the gage of the coin, and an inclosed single balance, so constructed that coins of different denominations may be weighed thereby, the spurious pieces being detected by their inability to materially depress the balance and roll therefrom.

It also consists of a projecting arm for controlling the balance, so that spurious coin may be readily removed from the case.

It also consists of guides depending from the top plate of the case below one or both of the slots thereof, whereby the spurious coin during the operation of removal will not catch under the top plate.

Referring to the drawings, A represents a case, consisting of sides A′ A′, top plate B, base C, open end D, and slotted end E.

In the top plate B there are two slots, F F′, which are of different lengths, and adapted, say, for half and quarter dollars, and they extend end to end in the longitudinal direction of the case.

Within the case, below the top plate B, there is mounted a balance, G, consisting of an elliptical-shaped or dishing bar, of such length as to project beneath both slots F F′, and so weighted or hung that the weight of either a half or quarter dollar applied through the respective slot and rested on the bar will depress the balance.

It will be noticed that the portion *a* of the balance beneath the short slot F curves or extends slightly upward, and the portion *b* beneath the long slot F′ curves downward, the free end of the balance being at the open side D of the case.

On the weighted portion of the balance there is an arm, H, which is secured thereto or formed therewith, and it projects through the slotted end E of the case, so as to be readily handled.

From the top plate B, and beneath the walls of the slot F′, there depend two vertically-extending bars, J, which flare, the widest part being below.

The operation is as follows: If a genuine half-dollar is placed through the slot F′, or a genuine quarter-dollar through the slot F, it will rest circumferentially on the balance, and it overcomes the latter, so as to cause it to descend and assume such position that the coin will roll therefrom and escape through the open end D of the case, whereby its genuineness is established, after which the balance returns to its normal position.

Should a spurious half-dollar be placed on the balance, the latter will not materially descend, and the depression or downward curvature of the portion *b* of the balance prevents the spurious piece rolling therefrom, whereby it projects sufficiently above the top plate to indicate its nature. The same is true of a spurious quarter-dollar, only that it will roll into the portion *b* of the balance and project upward through the slot of the larger piece, the result and indication of which being similar to that stated of the larger piece.

In order to remove the spurious pieces the arm H will be held so as to render the balance immovable, whereby said pieces may be readily grasped by hand, or the arm will be raised, whereby the balance descends and the pieces roll therefrom through the opening D of the case.

It will be noticed that the same balance is employed for weighing coin of different denominations, the operation depending upon the introduction of the coin into the proper slot of the case.

As spurious pieces depress the balance to a limited extent, and they are liable to catch under the top plate, the bars J are employed to prevent the same, their service being to direct or guide the pieces into and tip through

the slot F', whereby they are readily accessible.

It is evident that the slots F F' act as gages to detect the genuine and spurious by their thickness and diameters.

I do not claim as my invention an independent or separate balance for each coin of a different denomination

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The case having a top plate formed with two slots, F F', of different lengths, and extending longitudinally end to end, in combination with the single balance G, projecting beneath both slots, and having an upwardly-extending portion, *a*, and downwardly-extending portion *b*, substantially as and for the purpose set forth.

2. The case and balance, in combination with an arm, H, secured to the balance and projecting through the case, substantially as and for the purpose set forth.

3. The case with a slotted top plate and the balance, in combination with depending guiding-bars J, substantially as and for the purpose set forth.

E. KRONENBERG.

Witnesses:
JOHN A. WIEDERSHEIM,
H. E. HINDMARSH.

P. DOHERTY.

COIN-DETECTOR.

No. 192,241. Patented June 19, 1877.

Fig. 1.

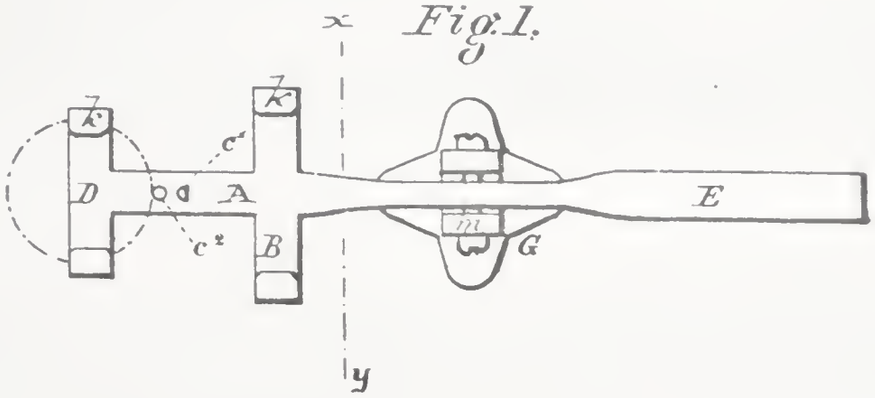


Fig. 2.

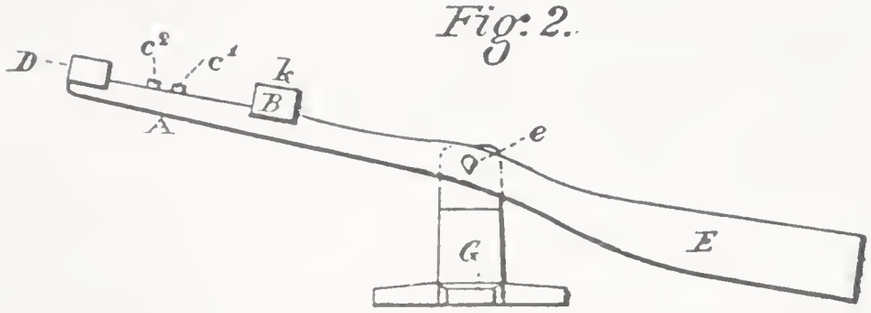


Fig. 4

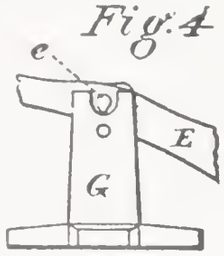
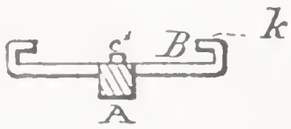


Fig. 3.



Witnesses.

John F. Grant

D. Louis Flivers.

Inventor.

Patrick Doherty

per Edw. Brown

attorney.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE

PATRICK DOHERTY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COIN-DETECTERS.

Specification forming part of Letters Patent No. **192,211**, dated June 19, 1877; application filed April 2, 1877.

To all whom it may concern:

Be it known that I, PATRICK DOHERTY, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Counterfeit-Coin Detecter, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a plan of the instrument. Fig. 2 is an elevation, with the cap of the stand removed. Fig. 3 is a cross-section on line *x y* showing the gage. Fig. 4 shows the side of the stand, with the cap *m* removed.

My invention consists in a balance-lever, with gages and adjusting stop attached, for weighing and measuring silver halves and quarter dollars, or gold coin, and detecting the counterfeits.

A represents the gage-arm, and E the weighted or resisting arm made in the form of an elongated weight, with easy curves, to facilitate the forming and polishing of the arm. G is the stand. *m* is the cap covering the pivot *e*.

For the detection of counterfeit half-dollars the gage-arm has secured to it a cross-piece, B, turned up and bent over, as shown in Fig. 3. The vertical portion of this cross-piece gages the diameter of the coin and the turned-over flange *k* gages its thickness. An adjusting stop, c^1, is inserted in the gage-arm at such a distance from the cross-piece, B, as to permit more than half of the coin to be inserted in the gage B. The form of this stop is of such convenience that it provides for an easy mode of accurately adjusting the balance of the instrument. This is done by filing off a small portion of the inside of the stop until the position of the coin is such as to turn the balance.

To detect the counterfeit quarters there is a similar gage, D, at the end of the gage-arm, and a similar stop, c^2. The quarter-dollars enter the gage from the extremity of the arm, and the halves enter their particular gage from the pivot side. The pivot *e* is made of steel, and is knife edged, as in scale-beams, and is supported by the stand G.

I do not confine myself to the number of gages herein shown, or to the precise manner of forming the lip *k*, as a large-headed screw might readily be used. Gold coin may also be tested in a similar manner.

As the specific gravity of silver is greater than that of any baser metal, a counterfeit must be either larger in size, if of the same weight, or lighter, if of the proper size, than the genuine coin.

When the coin passes through the gage to the stop c^1 more than half the coin is held by the gage which tests the diameter as well as the thickness of the coin, and the lever tests the weight.

It will thus be seen that, with one operation or manipulation of the coin, I can test it in diameter, thickness, and weight, and thus detect a counterfeit.

I claim—

1. In a counterfeit-coin detecter, the combination of the resisting-arm E, the arm A, the gage B for testing the diameter and thickness of the coin, and the adjusting-stop c^1, as herein described.

2. The combination of the arm E, the arm A, a gage for detecting the diameter of the coin, and stop c^1, for adjusting the instrument, as herein described.

3. The combination of the arms E A, the gages B and D, and the adjusting-stops c^1 c^2, as herein described.

PATRICK DOHERTY.

Witnesses:
EDWD. BROWN,
JOHN F. GRANT.

J. A. THOMPSON.

COUNTERFEIT COIN DETECTOR.

No. 189,284. Patented April 3, 1877.

Fig. 1

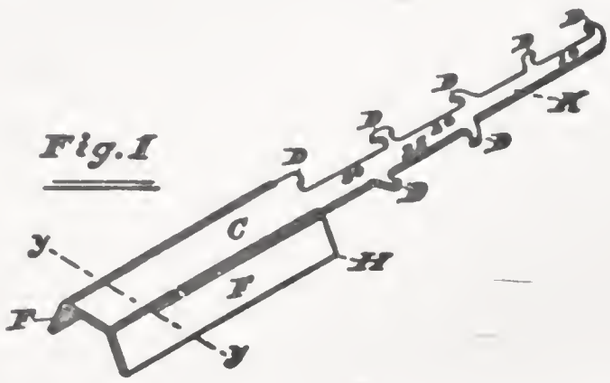


Fig. 2

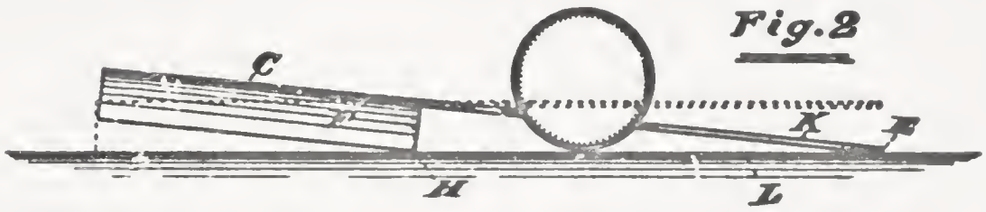


Fig. 3

Fig. 4

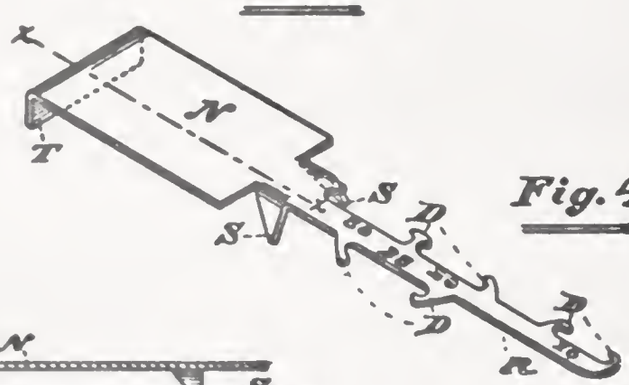


Fig. 5

Attest

W^m. T. Baker

Francis J. Colby

INVENTOR

John A. Thompson

UNITED STATES PATENT OFFICE

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. 189,284, dated April 3, 1877; application filed February 23, 1877.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Counterfeit-Coin Detecters, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention; Fig. 2, a side view of my invention when testing a genuine coin. Fig. 3 is a sectional view on the line y y, Fig. 1.

This instrument can be struck out completed (except bending the flanges F) by one stroke of a die.

The object of the invention is the detection of counterfeit coin. Counterfeit coin are usually lighter than genuine, and on this fact the invention is based.

F are flanges, on which the instrument rests. These flanges F are bent from the bar or plate C at an angle of from seventy to eighty degrees, as being a suitable angle, but may be at a greater or less angle. The part K of the plate C K that projects beyond the flanges F is supplied with ears or lugs D, arranged in pairs. Each pair is so constructed as to clasp a coin of the denomination designed for it.

The space designed for a United States coin of a given denomination is suitably indicated on the bar K.

The beam or bar C K is balanced, so as to rest on the flanges F, as shown in Fig. 1. When a genuine United States silver coin is placed in its proper receptacle the bar C K will be tipped down, as shown in Fig. 2, till the point E rests on the table or support L, the bar C K turning on the point H of the flanges F.

If a genuine coin of a given denomination is placed in the receptacle corresponding to such denomination the bar K will be tipped, as shown in Fig. 2.

If a counterfeit coin of the proper denomination is placed in either receptacle the instrument remains resting on the flanges F, as shown in Fig. 1.

What I claim as new, and wish to secure by Letters Patent, is—

In a counterfeit-coin detecter, the bar C K, provided with the flanges F, and lugs D D, substantially as shown and described, and for the purpose set forth.

JOHN A. THOMPSON.

Witnesses:

HENRY C. STECNG,

F. J. SEYBOLD.

T. J. TOWSEY.

DEVICE FOR DETECTING COUNTERFEIT COIN.

No. 187,938. Patented Feb. 27, 1877.

Fig: 1.

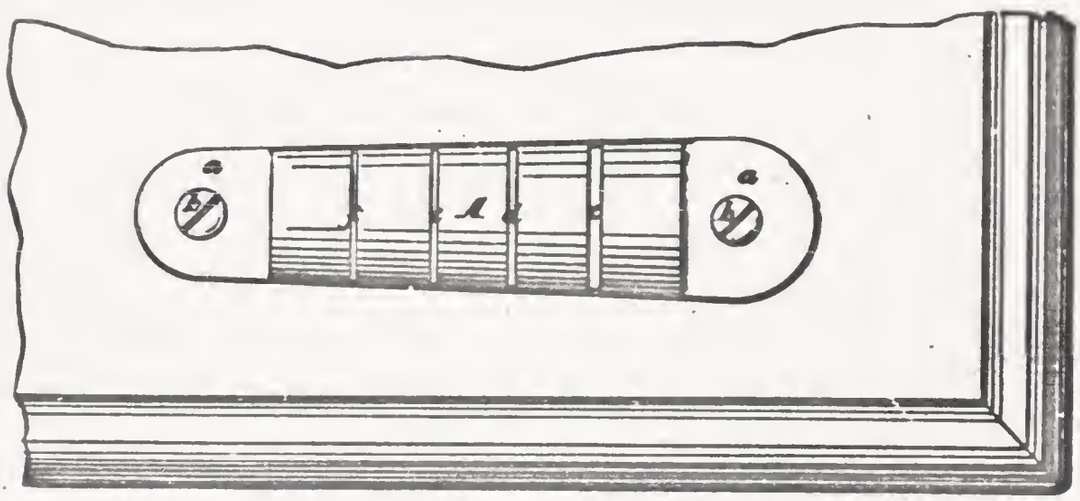
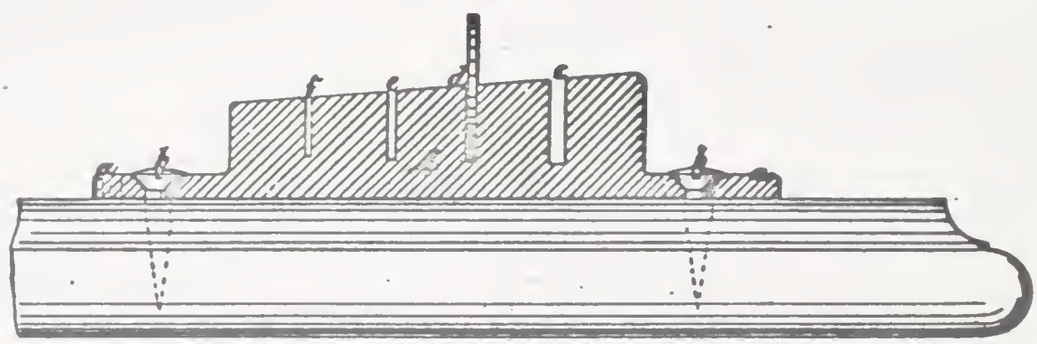


Fig: 2.



Witnesses:

Otto Hufeland

Robt. E. Miller.

Inventor.

Thomas J. Towsey

by Van Santvoord & Hauff

his attorneys.

UNITED STATES PATENT OFFICE.

THOMAS J. TOWSEY, OF NEW YORK, N. Y.

IMPROVEMENT IN DEVICES FOR DETECTING COUNTERFEIT COIN.

Specification forming part of Letters Patent No. 187,928, dated February 27, 1877; application filed December 13, 1876.

To all whom it may concern:

Be it known that I, THOMAS J. TOWSEY, of the city, county, and State of New York, have invented a new and Improved Device for Testing the Breaking Resistance of Coins, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a plan or top view. Fig. 2 is a longitudinal vertical section.

Similar letters indicate corresponding parts.

My invention has for its object to test the breaking resistance of coins, and to detect the spurious nature of such coins which are made of base metals, but equal in weight and in other qualities to genuine coins.

My invention consists of a receiver, composed of a body having at each end a flange perforated for the passage of screws, to fasten it to a counter or table, and constructed with a series of vertical slots of different width, into either of which a coin of corresponding size to the slot can be placed, for testing the same, as hereinafter more fully described.

In the drawing, the letter A designates a receiver, which is made of cast-iron or any other suitable material, and provided with flanges *a* perforated with holes for the reception of screws *b*, by means of which the same can be readily and firmly secured on a table or counter. In the receiver A are a series of recesses, *c d e f*, of gradually diminishing width and depth, the first recess being intended for testing silver dollars, the second for silver half-dollars, the next for silver quarters, &c. The recess *c*, therefore, is made a little wider than the thickness of a silver dollar, and its depth is about equal to the radius of such a dollar piece, while the width of the recess *d* is a little larger than the thickness of a fifty-cent silver piece, and its depth is about equal to the radius of such a piece, and so on. In the example shown in the drawing all the recesses *c d e f* are in one and the same receiver; but, if desired, a separate casting may be provided for each recess.

The coin to be tested is dropped into the corresponding recess, as shown in Fig. 2, and by pressing against its projecting edge with the thumb, its breaking resistance is ascertained. By these means the spurious nature of such coins can be ascertained which are made of base metal, and which have the same weight and ring as genuine coin, but not the same breaking resistance.

What I claim as new, and desire to secure by Letters Patent, is—

The receiver A, formed at each end with a perforated flange, *a*, for the passage of screws, to secure it to a counter or table, and provided in its body with a series of vertical recesses, *c d e f*, of different width and depth, substantially as and for the purpose herein described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 6th day of November, 1876.

THOS. J. TOWSEY. [L.S.]

Witnesses:
ROBT. E. MILLER,
E. F. KASTENHUBER.

G. M. HOPKINS.

COIN TESTER.

No. 188,637. Patented March 20, 1877.

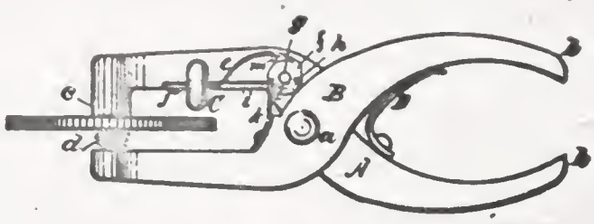


Fig 1.

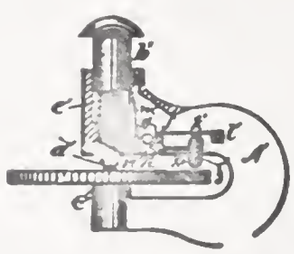


Fig 2.

WITNESSES:

H. M. Hopkins.

E. L. Topliff

INVENTOR:

Geo. M. Hopkins.

UNITED STATES PATENT OFFICE.

GEORGE M. HOPKINS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND CYRUS L. TOPLIFF, OF SAME PLACE.

IMPROVEMENT IN COIN-TESTERS.

Specification forming part of Letters Patent No. 188,627, dated March 20, 1877; application filed February 12, 1877.

To all whom it may concern;

Be it known that I, GEORGE M. HOPKINS, of Brooklyn, in the county of Kings and State of New York, have invented an Improved Coin-Tester, of which the following is a specification:

My invention consists in the combination of a clamp for holding coin and a spring-actuated hammer for striking the same, the object being to provide a simple, compact, and yet effective instrument for testing coins by ringing them by means of a hammer while they are held by a clamp.

In the drawing, Figure 1 is a side elevation of an instrument employing levers to clamp the coin. Fig. 2 is a side elevation of an instrument in which the coin is clamped by a follower.

A B are crossed levers, pivoted together at *a*, having the arms *b* formed into handles, which are thrown apart by the spring D. Upon the end of the lever A opposite its handle a boss, *c*, is formed, and to the end of the lever B opposite its handle a spiral spring, *d*, is attached. C is a hammer fixed to a spring-arm, *e*, that is attached to a disk, *f*, which is pivoted at *g* to the lever A. A pin, *h*, projects from the back of the disk *f*, and is pressed by a spring, *i*, that is secured in a recess in the lever A by a screw, *j*. A spring, *k*, that projects from the lever B, engages a notch cut in the disk *f* when the handles are forced together, and raises the hammer. The shoulder *l* of the disk *f* throws the spring *k* out of the notch in the disk when the hammer is raised, and the spring *i*, acting on the pin *h*, causes the hammer to descend. The spring-arm of the hammer strikes pin *m*, that projects from the lever A, as the hammer descends, causing it to rebound after striking the coin.

The coin to be tested is clamped between the boss *c* of the lever A and the spring *d*, attached to the lever B, by closing the handles together.

This operation not only clamps the coin, but also partly raises the hammer. The pressure on the handles is increased until the hammer is raised through its full stroke and tripped.

The sound emitted by the coin as it is struck by the hammer indicates its quality.

In Fig. 2 an instrument is shown differing in form from that above described, but acting on the same general principle.

A′ is a yoke or U-shaped frame, which is bored to receive the follower *b′*, and is provided with a boss, *c′*, upon which the coin rests. To the inner end of the follower *b′* a short spiral spring, *d′*, is attached, between which and the boss *c′* the coin is clamped. A spring, *e′*, is placed in the larger part of the bore of the frame A′, and presses the shoulder of the follower *b′*. *f′* is a hammer, fixed to a spring-arm, *g′*, that is attached to a disk, *h′*, which is pivoted at *i′* to the frame A′. A notch, *j′*, is formed in the disk *h′*, which receives a spring, *k′*, that is attached at *l′* to the frame A′. A spring, *m′*, is attached to the follower *b′*, and engages a notch, *n′*, in the disk *h′*. As the follower is pressed downward the disk is turned, and the hammer raised until the shoulder *o′* trips the spring *m′*, permitting the hammer to fall and strike the coin, as in the other case.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a clamp for holding coin and a spring-actuated hammer for striking the same, substantially as herein shown and described.

2. The combination of the levers A B, spring *d*, hammer C, and springs *k i*, substantially as herein shown and described.

3. The combination of the U-shaped frame A′, spring-follower *b′*, hammer *f′*, and springs *k′ m′*, substantially as shown and described.

GEORGE M. HOPKINS.

Witnesses:

H. M. HOPKINS,

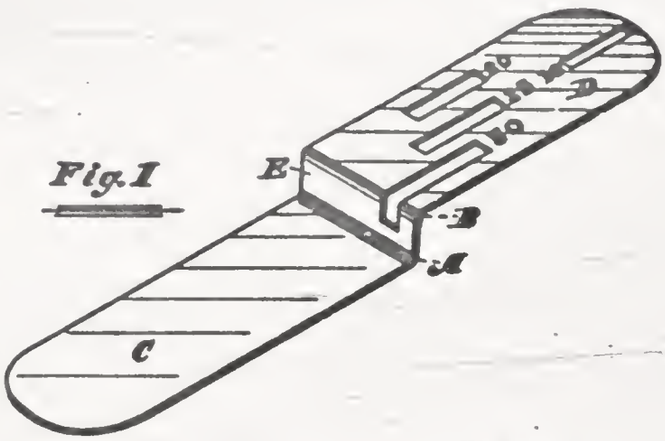
C. L. TOPLIFF.

J. A. THOMPSON.

DETECTORS OF COUNTERFEIT COIN.

No. 187,936. Patented Feb. 27, 1877.

Fig. 1



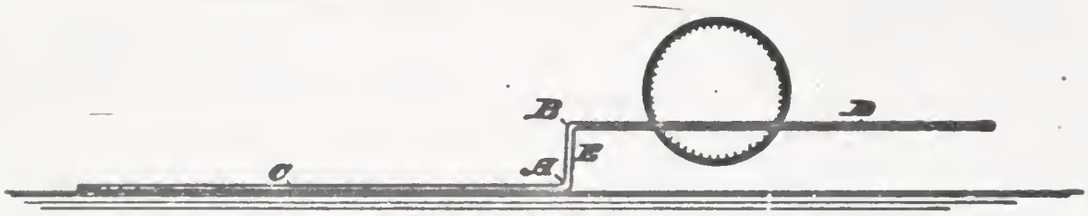


Fig. 2

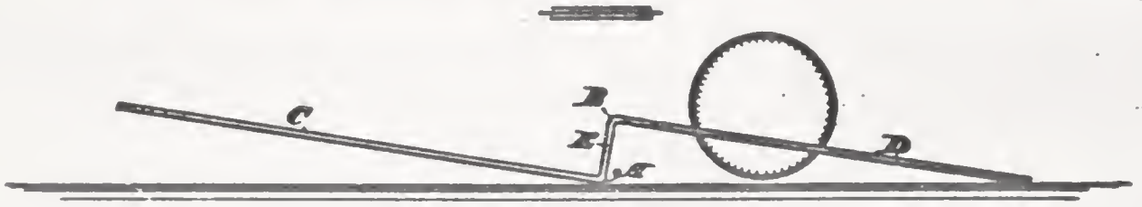


Fig. 3

Attest:

W. T. Baker

A. P. Teel

INVENTOR:

John A. Thompson

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ASSIGNOR TO FRANCIS M. SMITH, OF LAKE, ILLINOIS.

IMPROVEMENT IN DETECTERS OF COUNTERFEIT COIN.

Specification forming part of Letters Patent No. 187,926, dated February 27, 1877; application filed January 12, 1877.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Detecters of Counterfeit Coin, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

Figure 1 is a perspective top view of my detecter. Fig. 2 is a side view in the position which it occupies when testing a counterfeit coin. Fig. 3 is a side view in the position it occupies when testing a genuine coin.

The instrument is simply a plate of metal, or other suitable material, (in size and shape similar to an ordinary paper-knife,) with a right-angular bend in or near the middle, as shown in the drawings. On one side of this right-angular bend or fulcrum the plate is plain, with its outer end, when the instrument is not in use, resting on the table, counter, desk, or other level support. On the other side of the right-angular bend or fulcrum the plate contains slots, as per drawings, for coins of different denominations to be tested. The slotted end of the plate contains, say, four places for United States coin, marked respectively ten, twenty, twenty-five, fifty, corresponding to the denominations, in cents, of the most common United States silver coins, and may contain a slot for any coins, United States or foreign, silver or gold. These slots are of such nicely and properly graduated distances from the right-angular bend or fulcrum, according to metrical rules and tests, that when a genuine coin is placed in its proper receptacle, it barely tips the plate on its angular bend or fulcrum until the slotted end rests on the table or other support, as shown in Fig. 3 of the drawings. Consequently, when a counterfeit coin is placed in the slot corresponding to its denomination, it is immediately detected by its light weight in not tipping the balance, or its greater bulk in filling the slot, as the spurious metal, as is well known, is almost invariably lighter than the genuine, and the coin must therefore be necessarily lighter or larger.

What I claim as new and as my invention, and desire to secure by Letters Patent, is—

The coin-weighing plate C D, provided with the right-angular bend A B, and slotted at D, substantially as described, and for the purpose set forth.

JOHN A. THOMPSON.

Witnesses:

F. J. SEYBOLD,

A. J. KIDD.

A. BERNSTEIN.

COIN-COUNTERS.

No. 183,833. Patented Oct. 31. 1876.

Fig: 1.

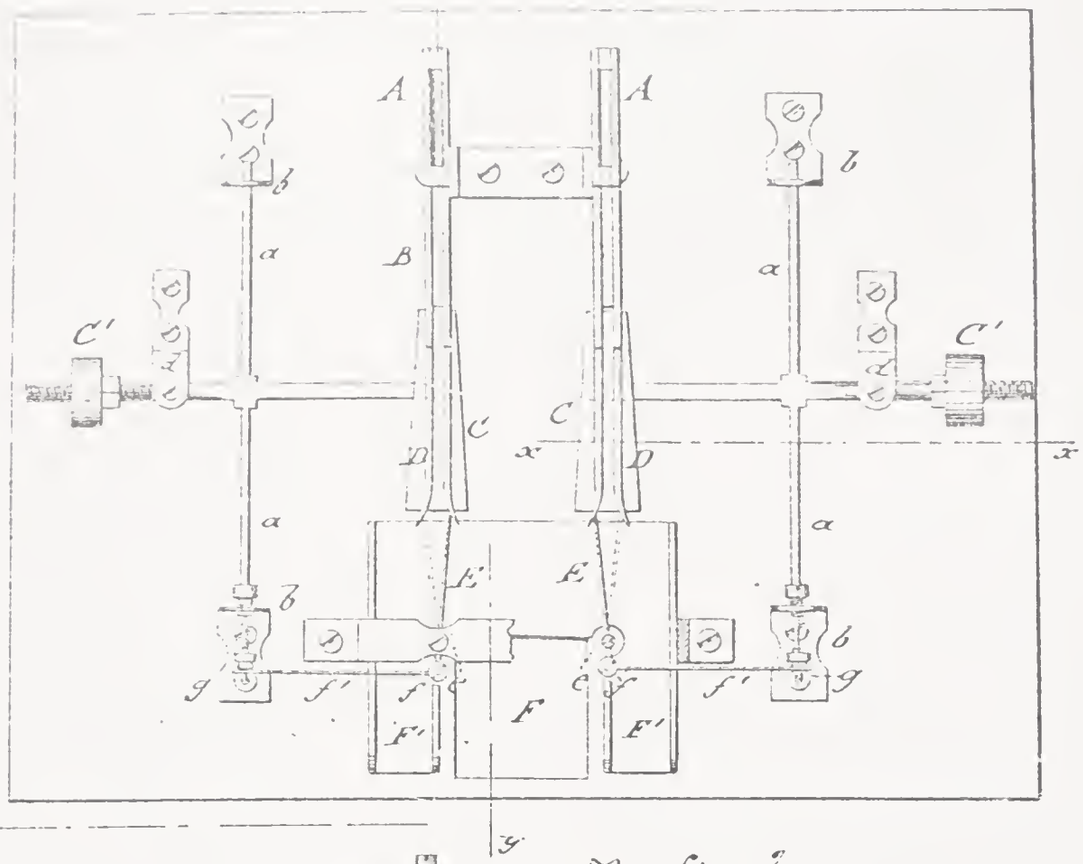


Fig: 2.

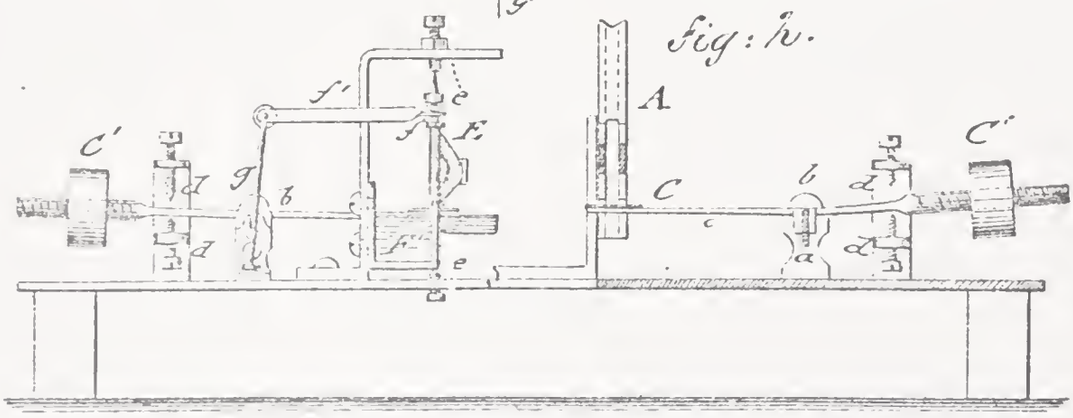
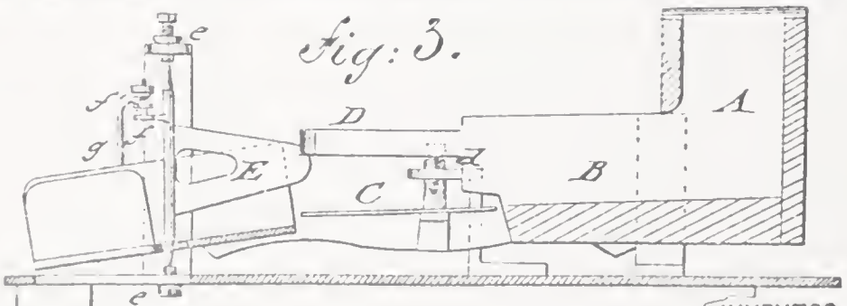


Fig: 3.



WITNESSES:

Chas. Nida.

John Goethals

INVENTOR:

A. Bernstein

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ARON BERNSTEIN, OF BERLIN, PRUSSIA.

IMPROVEMENT IN COIN-COUNTERS.

Specification forming part of Letters Patent No. 183,833, dated October 31, 1876; application filed September 9, 1876.

To all whom it may concern:

Be it known that I, ARON BERNSTEIN, of Berlin, Prussia, in the Empire of Germany, have invented a new and useful Improvement on Apparatus for Separating False and Light Gold Coins, of which the following is a specification:

This apparatus has for its object to provide the public with a simple and convenient means of testing, in quick and automatic manner, the genuineness and correct weight of every gold coin received, without having recourse to gold-scales, which occasion loss of time and disclose a feeling of distrust toward customers and others, and are, for this reason, but little employed in ordinary business.

The apparatus furnishes a reliable means to instantly detect any false or light gold coin without showing the mode or mechanism by which the same is tested, so that thereby the business man is protected against losses arising from this source.

This object is obtained in the present apparatus by allowing the gold coin to fall through a narrow opening and guide-channel onto a balance or tilter, from which it will, if genuine and of full weight, roll at once, by suitable deviating mechanism, into the cash box or receptacle; but if it is not genuine, or of short weight, it is conducted into a separate open receptacle, so as to indicate directly the lack of genuineness or full weight.

The apparatus may be arranged for gold coins of one, two, or more different denominations—as, for instance, for ten and five dollar gold pieces, or to English, French, or German coins, the apparatus being readily adapted and adjusted for either monetary mint.

As the parts of the apparatus adapted for smaller or larger coins are similar to each other, differing merely slightly in dimensions, it is only necessary to describe one part of the apparatus, the others being more or less identical in construction.

In the accompanying Drawing, Figure 1 represents a top view, and Figs. 2 and 3 are vertical longitudinal and transverse sections, respectively, on line *x x* and *y y*, Fig. 1, of my improved apparatus for separating and detecting false and light gold coins.

Similar letters of reference indicate corresponding parts.

In the drawing, A A are two or more narrow openings or slots, that are preferably arranged in the counter, table, or other article, below which the apparatus is disposed for the purpose of being out of sight. The openings A are of such width and length as to correspond exactly to the thickness and diameter of the different gold coins in use. The gold coin is dropped through the opening A, and passed along a vertical guide-channel onto an inclined plane, B, along which it will roll, between guide-arms D, to a balanced plate or piece of metal, C. This plate C forms part of a balance, which is, however, not hung steadily and evenly, as usual in balances, but which is supported by a cross-lever, *a*, in uneven manner, so that the center of gravity is situated higher than the two hypomochlions *b* of the cross-lever. This balance may therefore more properly be called a "tilter." On the arm opposite the plate C is placed a weight, C′, that is adjustable on the threaded arm to such a nicety that a gold coin of proper weight, when it rolls over the plate C, is enabled to depress the tilter; but, on the other hand, a gold coin of too light weight, or a false coin of another metal with less specific gravity, would pass over the tilter without operating the same.

Any other false coin—for instance, one of an alloy of lead—having the correct weight would of necessity be of greater size than the opening A, and be thus detected even before being passed into the apparatus.

The required movement of the tilter is adjusted between set-screws *d*, that bear on the main lever of the same. The coin passes over the tilting plate C, between the guide-arms D, which are curved outwardly at the ends to a vane or wing-plate, E, that swings on a vertical pivot-rod on top and bottom bearings *e*, adjustable by screws. The vertical pivot-rod of the vane E is provided with a crank-pin, *f*, that is connected by a lever-rod, *f′*, with an upright arm, *g*, that is fastened to the cross-lever or axis *a* of the tilter, so as to produce the swinging of the vane when the plate C is depressed by the passage of a full-weighted coin. A light or false coin will not operate the tilter

and vane, and therefore leaves the vane in the position shown in full lines in Fig. 1. A full-weighted coin depresses the tilter and swings the vane into the position shown in dotted lines in Fig. 1, passing along the vane, and dropping directly into the cash box or receptacle F. A light or false coin does not move the vane from its normal position, and is therefore conducted along the same, over an inclined spout, F, to a suitable receptacle for false coins, which receptacle is preferably open, so as to indicate instantly the presence of a defective coin, and admit of its being taken out and handed back to the party that presented it for payment.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An apparatus for separating and detecting light and false gold coins, consisting, mainly, of conducting-channels, a tilting mechanism, and a swinging vane or wing operated thereby, and exit spouts, substantially in the manner and for the purpose set forth.

2. The combination, with the drop-opening A and guide-channels B D, of an adjustable balance or tilter that is only depressed by a coin of full weight, substantially as described.

3. The combination, with a tilting balance, of a swinging vane that is operated by the depression of the tilter by the gold coin, substantially as set forth.

4. The combination of the fulcrum-lever *a* of the tilter with arm *g*, lever-rod *f''*, crank-pin *f*, and vertically-pivoted vane E, substantially as described.

5. The guide-arms D, having curved outer ends, in combination with the vane E, swinging against either end, to conduct the coin without obstruction to the proper receptacle, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARON BERNSTEIN.

Witnesses:

BERTHOLD ROI,

EDWARD P. MACLEAN.

S. A. FIELD.

Counterfeit Coin Detector and Coin Receiver.

No. 203,719. Patented May 14, 1878.

Fig. 1.

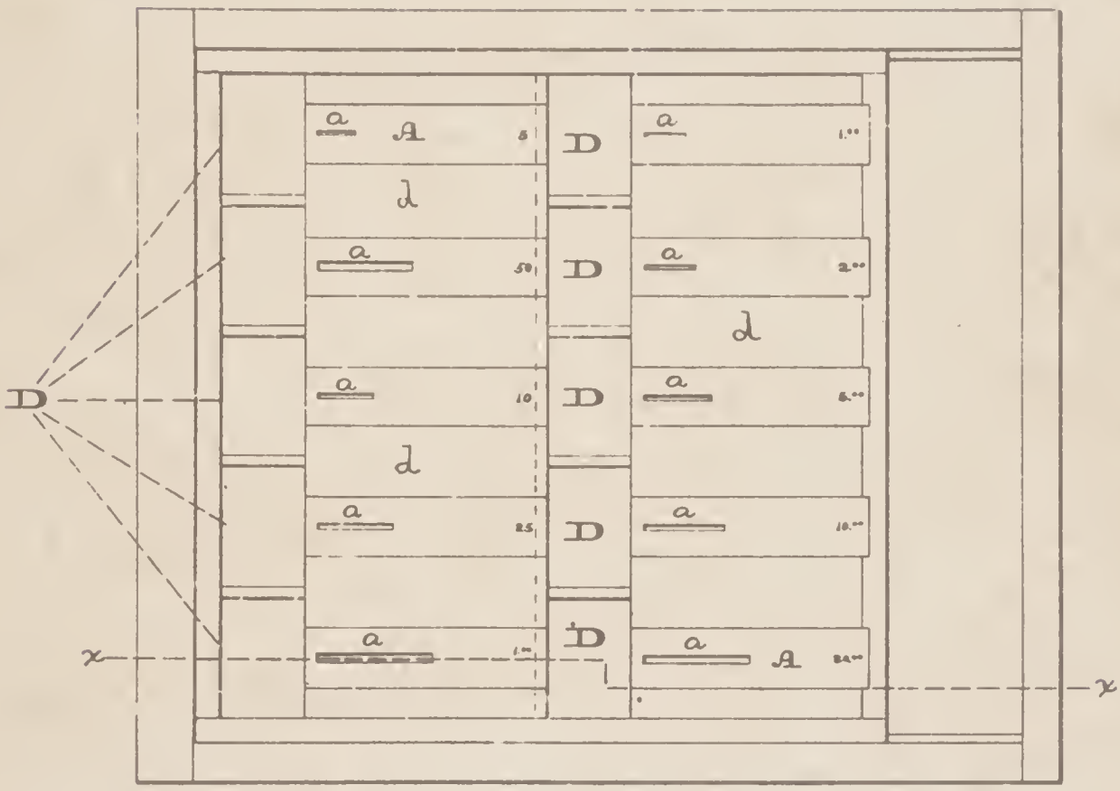
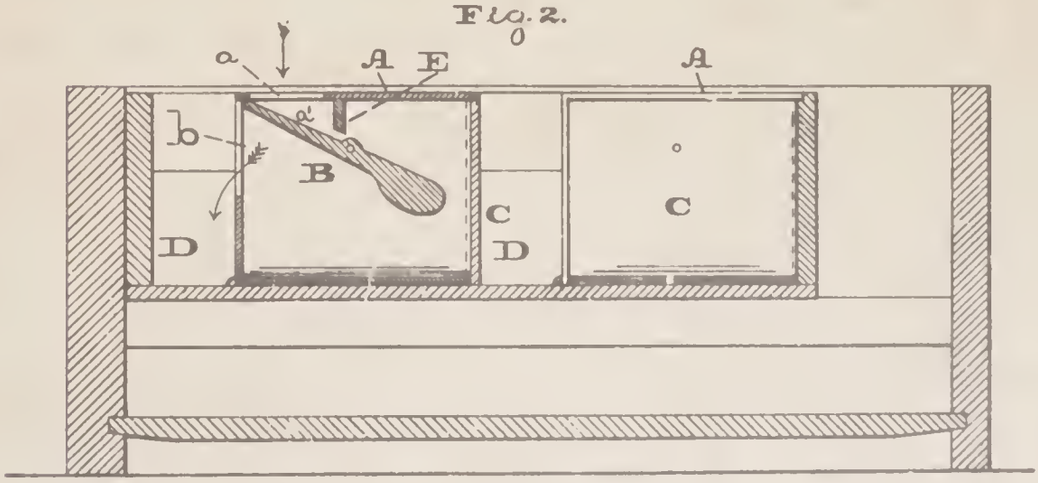


Fig. 2.



Witnesses:

A. P. Grant,

W. F. Fischer

Inventor:

Saml. A. Field,

by John A. Wiedersheim.

ATTORNEY

UNITED STATES PATENT OFFICE.

SAMUEL A. FIELD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTER AND COIN-RECEIVER.

Specification forming part of Letters Patent No. **203,719**, dated May 14, 1878; application filed March 1, 1878.

To all whom it may concern:

Be it known that I, SAMUEL A. FIELD, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Counterfeit-Coin Detecter and Cash-Receiver, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view of the device embodying my invention. Fig. 2 is a vertical section thereof in line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

My invention consists of coin-detecters for various denominations, in combination with boxes, receptacles, or apartments, so arranged that each genuine coin may be deposited in its respective box, thus providing means of detecting spurious coin and collecting the genuine coin, each denomination by itself.

Referring to the drawings, A represents a series of coin weighers or detecters, which are properly supported in a drawer or on a counter, table, or elsewhere, said detecters being for various denominations, and consisting generally of weighted poises, each inclosed within its own case C, having an inlet-throat, *a*, and a discharge-throat, *b*. The genuine coin admitted to the poise through the throat *a* will depress said poise, and then roll therefrom through the throat *b*, whereby it is discharged from the case C and its genuineness indicated. The spurious coin will not materially depress the poise, and this act will expose the nature of the coin.

These features are old, and no invention exists therein.

D represents boxes, receptacles, or apartments, each being arranged in relation to the discharge-throat of one of the coin-detecters, so that as the genuine coin leaves said throat it will fall into said box. Should the detecters be placed on a table or counter, the boxes D may be beneath the same, in which case openings will be made in the top of the table or counter for directing the coin from the detecters to the boxes.

It will be seen that spurious coin may be readily detected, and genuine coin will fall into the proper receptacles or boxes. Between the cases C there are blocks *b*, which support the detecters and enlarge the space necessary for the receiving-boxes.

As there is a detecter for each coin most in circulation and a box or receptacle for each detecter, it is evident that coin of each denomination will be collected by itself, thus preventing confusion in making change or counting the cash received, and presenting other advantages which will be readily appreciated by the store-keeper, clerk, cashier, or other receiver of the money.

Depending from the top plate of the case of the detecter, adjacent to the inlet-throat *a*, is a bar, E, which projects toward the poise, so as to occupy a position between the axis and central portion of the outer end of the poise.

It will be seen that, when a coin is inserted in the throat *a* and dropped on the right-lined face-poise *a'*, the bar E prevents the coin rolling toward the axis of the poise, whereby, as the coin is thus directed to the proper part of the poise, the action of the latter is unfailing and reliable in indicating genuine and spurious pieces.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combined coin-detecter and cash-receiver, the same consisting of a series of coin-detecters for various denominations, each inclosed in its own case, and separated by blocks *d*, in combination with the series of boxes D, arranged side by side in front of the outlet-throats of the detecters, all as set forth.

SAMUEL A. FIELD.

Witnesses:

JOHN A. WIEDERSHEIM,

H. E. GARSED.

E. LUEDERS.
Coin-Tester.

No. 205,492. Patented July 2, 1878.

Fig: 1

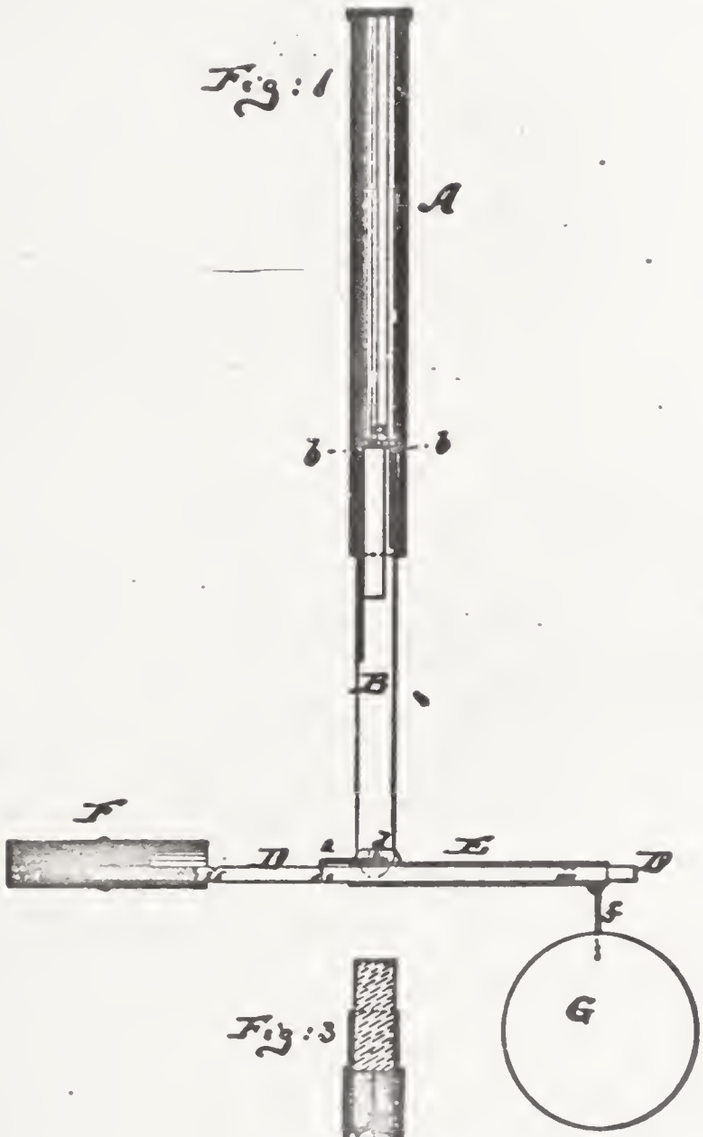


Fig: 2

Fig: 3

Fig: 4

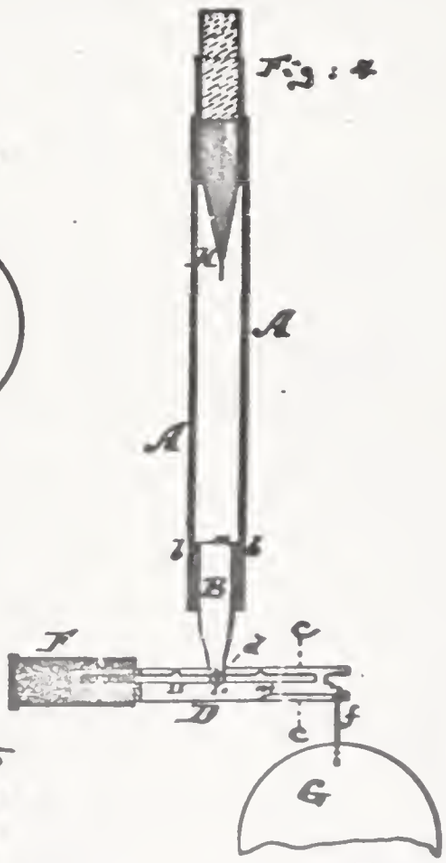


Fig: 5

Witnesses:
D. Briesen
T. B. Hosler

Inventor:
Emil Lueders
by his attorney
A. v. Briesen

UNITED STATES PATENT OFFICE.

EMIL LUEDERS, OF WEST HOBOKEN, NEW JERSEY.

IMPROVEMENT IN COIN-TESTERS.

Specification forming part of Letters Patent No. 203,492, dated July 2, 1878; application filed April 19, 1878.

To all whom it may concern:

Be it known that I, EMIL LUEDERS, of West Hoboken, in the county of Hudson and State of New Jersey, have invented an Improved Specie-Scale, of which the following is a specification:

Figure 1 is a vertical central section of my improved specie-scale, showing it extended for use. Fig. 2 is a vertical central section of the same, showing it contracted and folded together. Fig. 3 is a vertical central section of a modification thereof, showing the same folded together. Fig. 4 is a vertical central section of a modification thereof, showing it extended in condition for use. Fig. 5 is a detail cross-section on the line *c c*, Fig. 4, showing the clasp for holding the coin.

Similar letters of reference indicate corresponding parts in all the figures.

This invention has for its object to produce in the most convenient form a pocket-scale for weighing coins, and for distinguishing genuine from counterfeited coins.

The entire instrument can be folded or pushed into a shell, the same as a pocket-pencil, and can be carried in the pocket without inconvenience, and is yet always ready for use when desired.

The invention consists principally in combining, with the inclosing case or shell, having inwardly-projecting stops or pins, a slide having a head, and a scale-beam pivoted to said slide, so that it can be swung at right angles thereto.

The invention also consists in providing said beam at one end with a weight, and at the other end with a clasp for holding the coin to be weighed, and in other details of improvement, hereinafter more fully specified.

I will first describe the instrument as shown in Figs. 1 and 2. In these figures the letter A represents a shell made of sheet metal, hard rubber, or other suitable material, of cylindrical or other proper form, within which shell is contained a slide or piston, B, which can be pushed entirely into the shell, as in Fig. 2, or partly withdrawn therefrom, as in Fig. 1, its head *a* being, in the last-mentioned position, supported on inwardly-projecting pins or stops *b* that are formed within the shell A, as shown.

The lower end of the slide B is forked, and adapted to receive the pivot *d* of the scale-beam D. In the construction shown in Fig. 1, the scale-beam D proper slides within a sleeve, E, which sleeve is, by the pin *d*, pivoted to the slide B. The sleeve E carries, in this instance, a projecting spring-catch, *e*, which engages into notches formed on the edge of the beam D, to regulate the several positions of the latter. One end of the beam D carries a weight, F. The opposite end of the sleeve E carries a wire clasp, *f*, of the kind more clearly shown in Fig. 5, for holding the coin G to be weighed.

The beam D in Fig. 1 is shown to be provided with four notches. That nearest the weight F is for defining its position in weighing quarter-dollars; that next thereto, and in which the spring *e* is shown to engage in Fig. 1, defines the position of the scale-beam in weighing half-dollars. The third notch is intended to weigh the so-called silver "legal-tender" dollars; and that next thereto, the trade-dollars; but other notches may be supplied for weighing other kinds of coin, even gold coin, if desired.

When the instrument is not required for use, the sleeve E and beam D are folded into the forked slide B and pushed into the shell A, as in Fig. 2, in which case the cylindrical weight F will close the formerly open end of the shell, as also shown in Fig. 2.

The modification shown in Figs. 3 and 4 differs from the apparatus shown in Figs. 1 and 2 substantially only in that the sleeve E is dispensed with, the beam D being slotted instead, and the slot supplied with a series of notches, as clearly shown in Fig. 4, so that the beam may be directly adjusted on the pivot *d* in lieu of adjusting it within the sleeve E.

In this case the clasp *f* is directly attached to the non-weighted end of the beam D, as shown in Fig. 4. The construction shown in Figs. 3 and 4 is less expensive than the other, and more convenient in admitting of a shorter slide, B; but in other respects the operation is exactly the same.

The shell A may, if desired, be used for holding a pencil, H, as in Figs. 3 and 4, or a pen or other convenient device.

I do not claim to have invented a pocket-scale consisting of a shell, slide, and weighted

scale-beam pivoted to said slide, and carrying a clasp for suspending the coin, all arranged so that the scale-beam is at right angles to the slide when the scale is used; but

I do claim—

1. The shell A, made with inwardly-projecting stops or pins *b*, and combined with the slide B, having head *a*, and with the scale-beam D, pivoted to said slide so that it can be swung at right angles thereto outside of the shell, substantially as herein shown and described.

2. The combination of the pivoted sleeve E with the notched beam D, carrying weight F, and with the spring-catch *e*, for operation substantially as specified.

EMIL LUEDERS.

Witnesses:
T. B. MOSHER,
J. TURK.

G. HOAG.

Combined Scale and Coin Tester.

No. 216,184. Patented June 3, 1879.

Fig: 1.

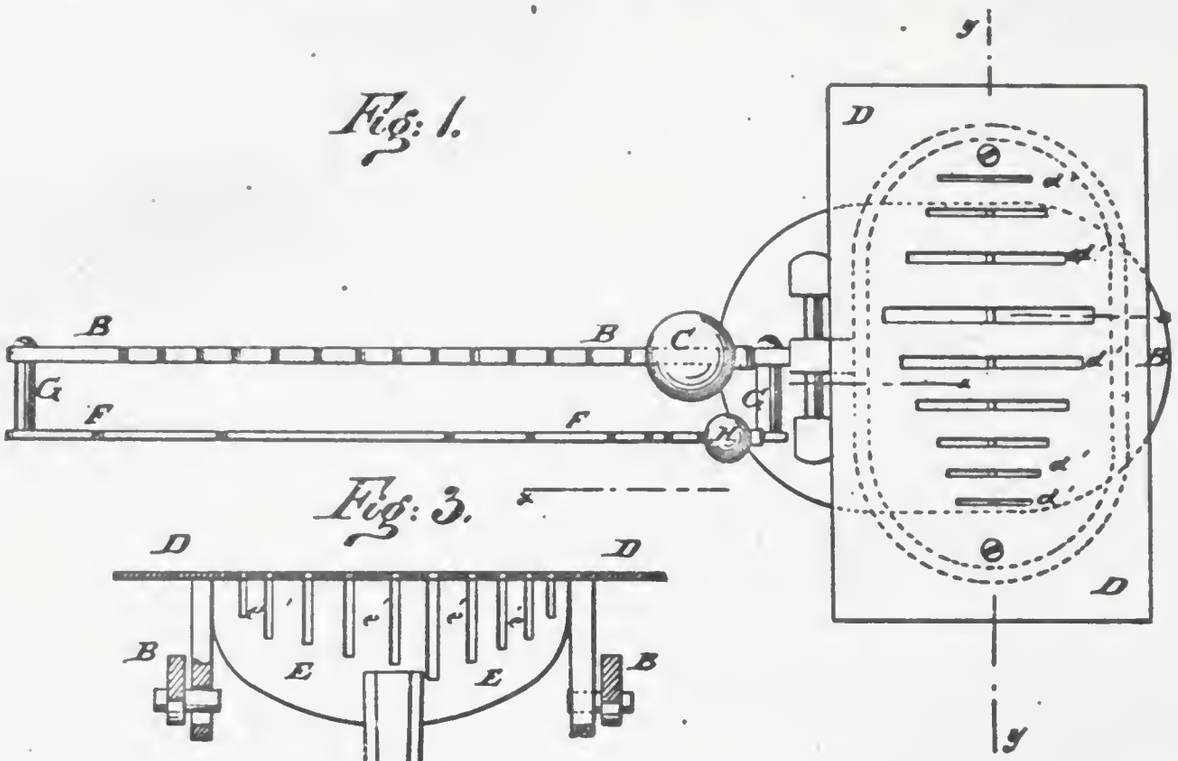


Fig: 3.

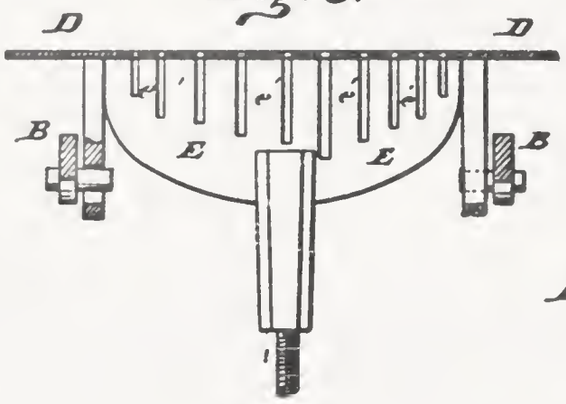


Fig: 2.

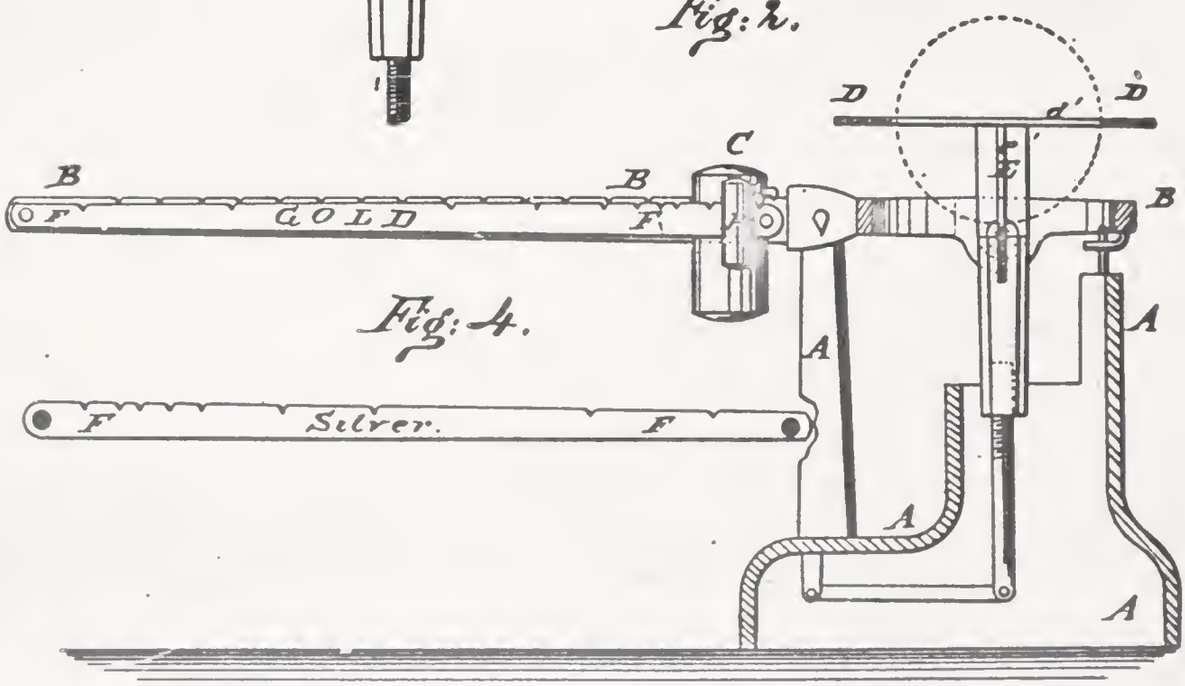


Fig: 4.

WITNESSES:

Chas. Nida.

A. Seigniret

INVENTOR:

G. Hoag

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE HOAG, OF NEW YORK, N. Y.

IMPROVEMENT IN COMBINED SCALE AND COIN-TESTER.

Specification forming part of Letters Patent No. **216,184**, dated June 3, 1879; application filed March 27, 1879.

To all whom it may concern:

Be it known that I, GEORGE HOAG, of the city, county, and State of New York, have invented a new and Improved Combined Scale and Coin-Tester, of which the following is a specification.

Figure 1 is a top view of my improved device. Fig. 2 is a side view of the same, partly in section, through the broken line *x x*, Fig. 1. Fig. 3 is a detailed cross-section of the same, taken through the line *y y*, Fig. 1. Fig. 4 is a detail view of the reverse side of the coin-scale beam.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish scales for weighing letters and other mail-matter which shall be provided with appliances for testing the weight, size, and thickness of coins, and which at the same time shall be simple in construction and convenient and reliable in use.

The invention consists in the combination of the slotted vertical plate with the slotted scale-pan of a scales, for testing the size and thickness of gold and silver coins; and in the combination of the second beam and its weight with the main beam and its weight, and with the scale-pan provided with the slots, and the vertical plate provided with the slots for testing the weight, the size, and the thickness of gold and silver coins, as hereinafter fully described.

A represents the standard, B the main beam, C the weight, and D the pan or platform, of the scales, which parts are connected together and balanced in the usual way.

The scale-pan D is made flat, and has a series of slots, *d'*, formed through it to receive the different gold and silver coins, the slots toward one end of the pan D being intended for the gold coins, and those toward the other end being intended for the silver coins. The slots *d'* are made of a length and breadth equal to the diameter and thickness of the various coins, so as to test their size and thickness.

To the central part of the lower side of the pan D is attached the upper edge of a vertical plate, E, which has slots *e'* formed in it directly beneath the slots *d'* of the said pan D. The slots *e'* are made of a breadth equal to the breadth of the slots *d'*, and of a depth equal to half the length of the said slots *d'*, so that the coins will be held with their diameters in line with the scale-pan D.

F is the beam which is used for testing the weight of the coins, and which is connected at its ends with the main beam B by bolts, screws, or rivets G. The beam F is provided with a weight, H, for balancing the coins. In the upper edge of the beam F are formed notches at the various points where the weight H should stand to balance the various coins.

The notches for the gold coins should be marked upon one side of the beam F, and the notches for the silver coins should be marked upon the other side of the said beam, with the value of the coins to which they belong.

The slots *d'* in the scale-pan D may also be marked with the value of the coins to which they belong.

With this construction the device, while serving as a scale for weighing letters and other mail-matter, also serves as a test for the size, the thickness, and the weight of gold and silver coins.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the scale-pan D, consisting of a horizontal plate, provided with slots *d'*, and the vertical plate E, provided with the slots *e'*, and the supplemental scale-beam F, secured by the bolts G to the scale-beam B, so as to be parallel with the said beam, and provided with the weight H, with the main beam B and its weight C, substantially as and for the purpose set forth.

GEORGE HOAG.

Witnesses:

JAMES T. GRAHAM,

C. SEDGWICK.

E. STREET.

Counterfeit Coin Detector.

No. 209,145. Patented Oct. 22, 1878.

Fig. 1.

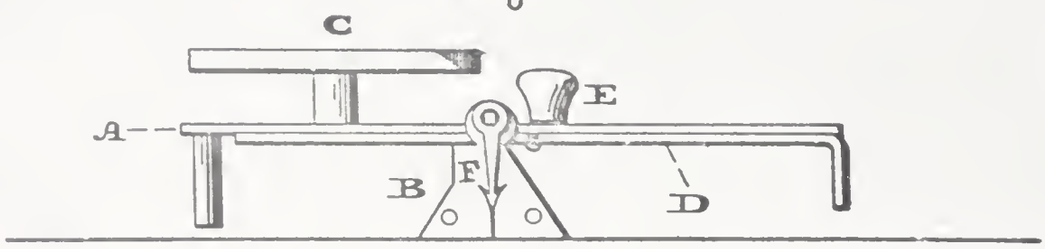


Fig. 2.

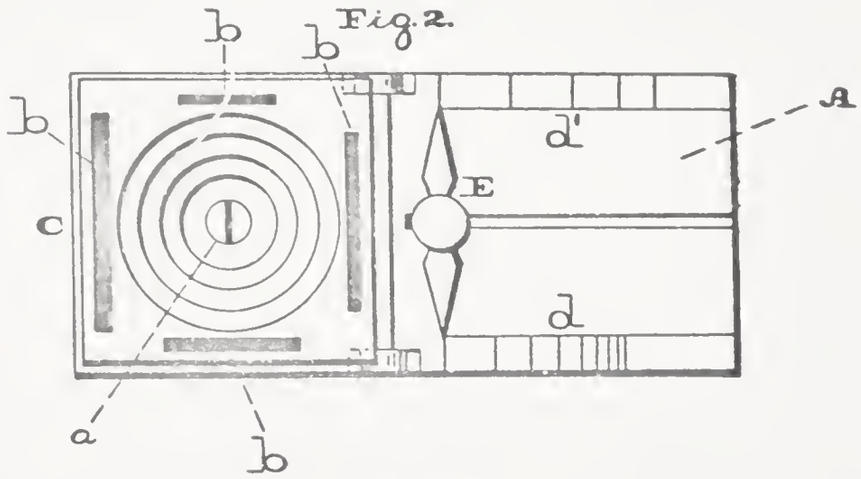
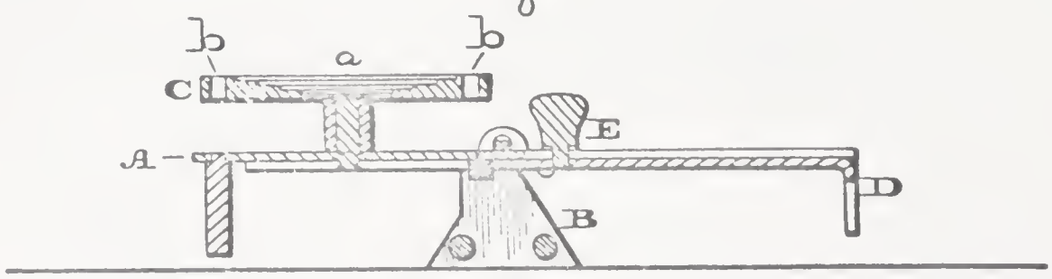


Fig. 3.



Witnesses:

Lewis F. Bowes,

A. P. Grant.

Inventor:

Edwin Street,

by John A. Lidersdorf

Attorney.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWIN STREET, OF SOUTH ORANGE, NEW JERSEY.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. **209,145**, dated October 22, 1878; application filed March 1, 1878.

To all whom it may concern:

Be it known that I, EDWIN STREET, of South Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Letter-Scale and Coin-Detecter, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the scale and detecter embodying my invention. Fig. 2 is a top view thereof. Fig. 3 is a longitudinal vertical section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of an implement adapted for the combined purposes of weighing letters and indicating the character of coin.

I employ a plate with a slide, an index, and an elevated tray with concentric concavities and slots, the operation whereof will be more fully set forth.

Referring to the drawings, A represents a poise or balance-plate, and B the standards thereof. On one side of the plate A there is supported a tray, C, on whose upper face is a series of concentric concavities, *a*, which increase in depth and are of diameters corresponding to those of various denominations of coin to be weighed, so that genuine coin will exactly fit the relative concavity.

In the tray there are also formed slots *b*, of dimensions corresponding to the thickness of genuine coin, whereby the latter will exactly fit the relative slot. To the plate A, on the side opposite to the tray C, there is fitted a slide, D, which carries a double index, E, overhanging the respective portion of the plate A, and pointing to postal and coin gradations *d d* formed on the said portion of the plate, the index being preferably constructed of spring metal, so as to produce friction between the plate and slide and prevent accidental movement of the latter during the operations of weighing letters or detecting coin.

In order to weigh a letter, the latter is placed on the tray C, and the slide D is moved until the plate is balanced, the tray being elevated to prevent contact of the letters, &c., with adjacent parts of the device. The weight of the letter may now be readily read off by observing the location of the index on the gradnation or postal scale *d*.

When coin is to be weighed the scale will be moved to bring the index over the graduations *d'*, opposite the one corresponding to the weight of the genuine coin. If the scale is in equilibrium, the coin may be considered genuine, subject to the further test of the manner in which the coin fits the relative concavity *a* and slot *b*.

It will be noticed that the slide D constitutes the counterpoise of the scale, thus dispensing with separate weights, and that the coins of different denominations are weighted on the same tray C, thus producing a simple and compact implement for the purposes intended.

For delicate weighing of coin and letters, I employ an auxiliary index or finger, F, which is secured to the axis of the plate A and sweeps over the adjacent standard B, having a central mark or characteristic for indicating the true weight of the genuine coin or registering with the gradnations *d d'* of the plate A.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The plate A and slide D, in combination with the elevated tray C, provided with concentric concavities *a* and surrounding slots *b*, substantially as and for the purpose set forth.

EDWIN STREET.

Witnesses:
ROBERT H. POLLOCK,
ELI LONG.

DESIGN.

J. T. McNALLY & W. H. HARRISON.

SCALES.

No. 12,795. Patented Feb. 28, 1882.

Fig 1.

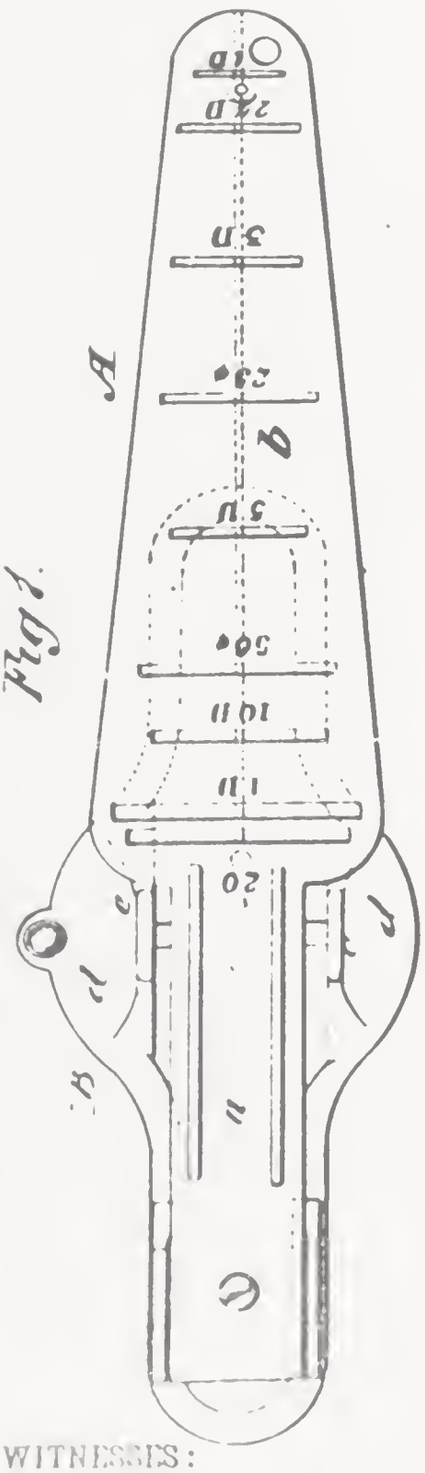
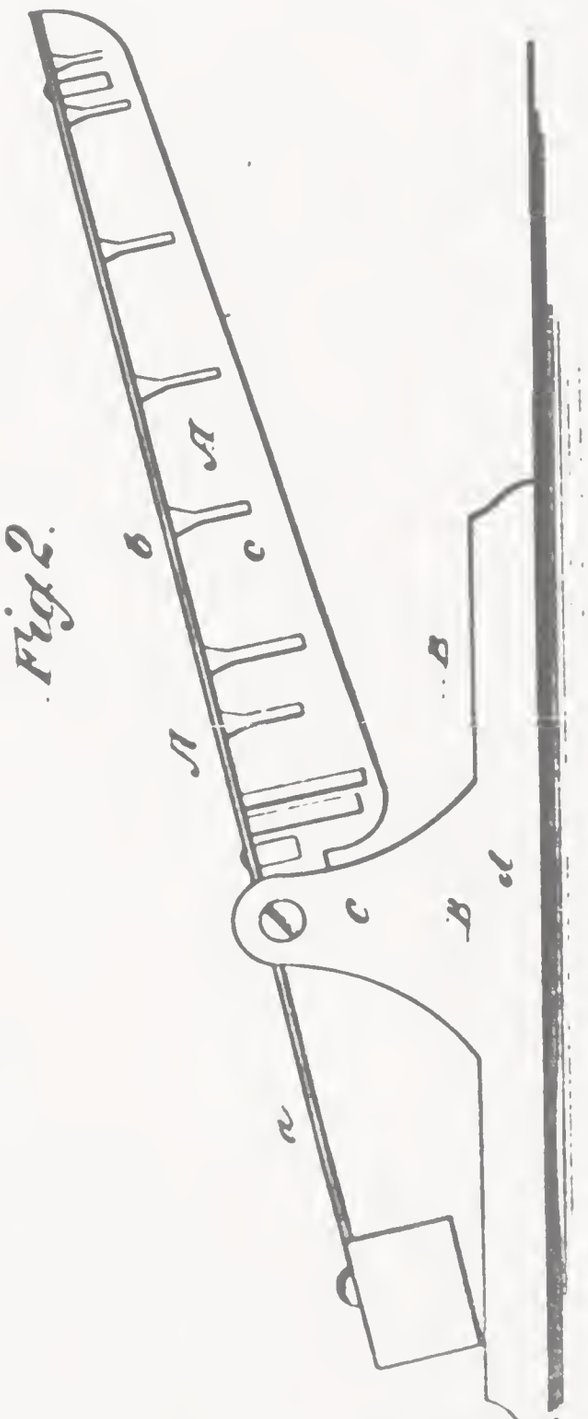


Fig 2.



WITNESSES:

INVENTOR:

BY

UNITED STATES PATENT OFFICE.

JAMES T. McNALLY AND WALTER H. HARRISON, OF NEW YORK, N. Y.

DESIGN FOR SCALES.

SPECIFICATION forming part of Design No. 12,795, dated February 28, 1882.

Application filed January 6, 1882. Term of patent 7 years.

To all whom it may concern:

Be it known that we, JAMES T. McNALLY and WALTER H. HARRISON, of the city, county, and State of New York, have invented a new and Improved Design for Scales, of which the following is a full, clear, and exact description.

Reference is to be had to the following drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

In the drawings, Figure 1 is a plan view, and Fig. 2 a side view, of our newly designed scale.

A represents the beam, and B its supporting base. *a* is a portion having parallel sides, and *b* a portion having tapered sides, rounded end, and rounded at the vertices of the angles. *c* is a depending rib or flange on the under side of the beam. The whole presents an ornamental appearance to the eye. The base B is oblong in the direction of the length of beam A, and is widened at its mid-length by rounded side extensions, *d d*, at which place it is also formed with vertical flanges *e e* for support of the beam.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The design for scales herein shown and described, which consists in the oblong base B, having side extensions, *d*, and flanges *e*.

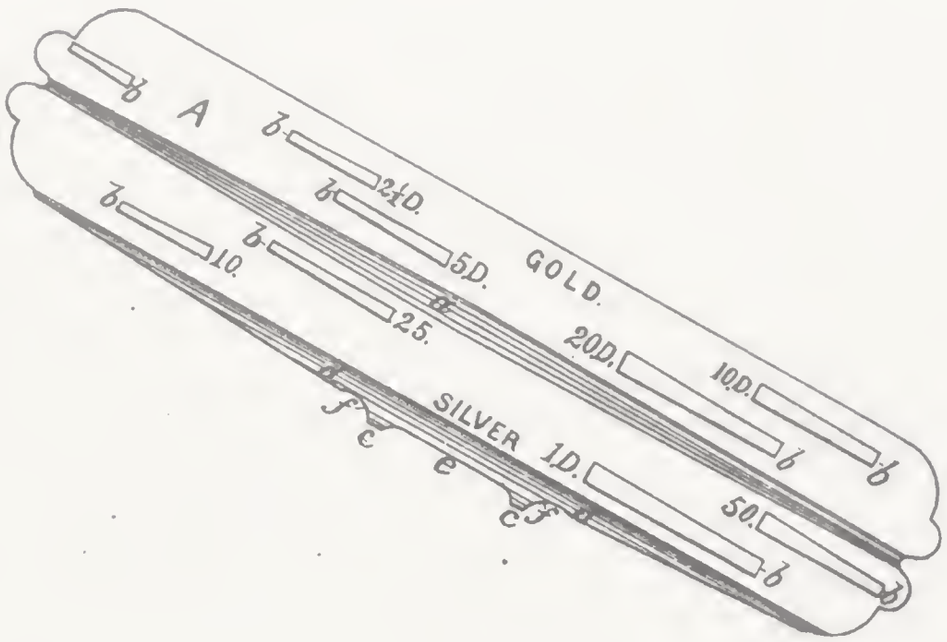
JAS. T. McNALLY.
W. H. HARRISON.

Witnesses:
GEO. D. WALKER,
C. SEDGWICK.

J. A. THOMPSON.

Counterfeit Coin Detector.

No. 224,807. Patented Feb. 24, 1880.



WITNESSES.

Wm Zimmerman

Chas H. Wood

INVENTOR.

John A. Thompson

By Gridley & Co

Attys

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTER.

SPECIFICATION forming part of Letters Patent No. 224,807, dated February 24, 1880.

Application filed January 13, 1880.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Counterfeit-Coin Detecters; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which the figure represents a perspective view of a counterfeit-coin detecter embodying my improvements.

The object of my invention is to provide a device that will readily and surely detect counterfeit from genuine coin; and my invention consists in the construction of the device or detecter, as hereinafter described and claimed.

It is well known that when coin is made wholly or in part of base metal it is lighter than genuine coin of the same size, and if made of the same weight it must necessarily be thicker or larger in diameter than the genuine coin.

In the drawing, A represents a plate of sheet metal of known gage and weight, preferably of brass or German silver, and may be of any desired dimensions, and which is first stamped from a flat piece of metal, and its depending and tapering sides or flanges afterward formed as shown, so as to form the fulcrum for the plate.

In the center of the plate, and running from end to end, is a struck-up rib, *a*, which stiffens and strengthens the plate and divides it into two parts, one side of which is adapted and marked for gold coin and the other for silver. On either side of the rib *a* is a series of slots or perforations, *b*, each of which is of the same width for about one-third of its length, and then gradually increasing in width, so as to form a tapering slot toward the fulcrum of the plate, said slots being of a width sufficient to receive and hold the coin of the desired denomination without allowing it to pass wholly through.

Each of the slots *b* is made wider at its end nearest the fulcrum of the plate, so as to readily receive the coin, while its other end is made of a width corresponding to the thickness of the coin, so that when a genuine coin is placed and held within the slot corresponding to its denomination it will cause the plate to tip down over the fulcrum *c* nearest to such coin, the fulcrum *c* being previously adjusted for that purpose. If the coin is made thicker than and so as to correspond in weight with the genuine coin it will not pass within the desired slot to its proper place, and will, consequently, fail to tip the plate on its fulcrum.

It will be observed that the flanges *d* are made tapering from at or about their fulcrums to their ends, and that the plate A is provided with two fulcrums, *c*, which are formed out of and as a part of the flanges *d*. The space *e* between the fulcrums *c* need not necessarily be cut out, and the notches *f* may be filed away (more or less) for the purpose of adjusting the fulcrums to the plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, substantially as shown and described.

2. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

3. In a counterfeit-coin detecter, the plate A, provided with rib *a*, tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

JOHN A. THOMPSON.

Witnesses:
WM. ZIMMERMAN,
N. COWLES.

(No Model.)

G. SMITH & J. J. WELLS.

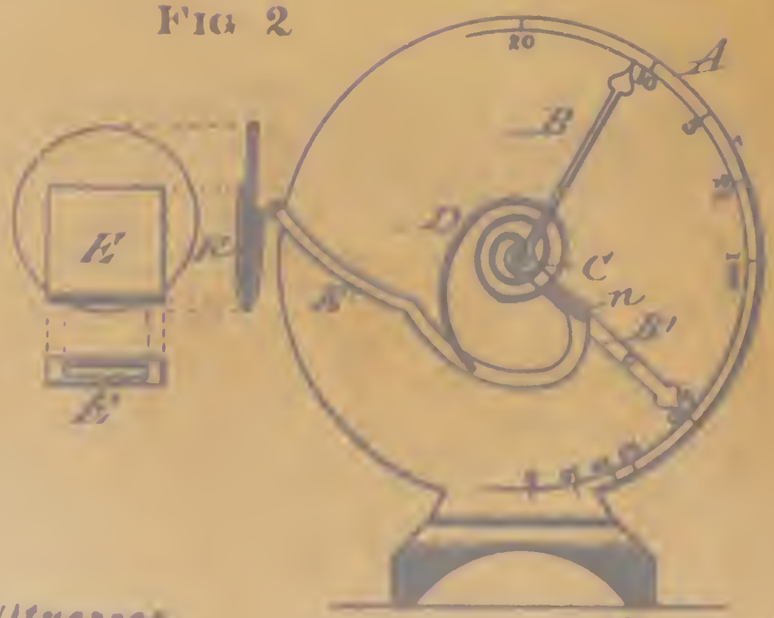
COIN TESTER AND INDICATOR.

No. 259,338 Patented June 13, 1882.

FIG. 1

FIG 3

FIG 2



Witnesses
Wilmer Bradford
Charles A. Shewey

Inventors
G. Smith and
John J. Wells.
By Wm. Smith.
Attorney.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA.

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 209,238, dated June 18, 1878.

Application filed December 14, 1877. (No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, and residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Coin Tester and Indicator, of which the following is a specification.

The object of our invention is to provide a means whereby spurious coins and coins of short weight may be easily and quickly detected.

We accomplish this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the dial with cap for covering the mechanism in position. Fig. 2 is also a front elevation of the dial and stand with cap removed. Fig. 3 is a vertical section in elevation.

Similar letters refer to similar parts throughout the several views.

Our indicating dial A is mounted upon a stand, as shown, and provided with a scale for testing gold coins of the denomination of two dollars and a half, ($2½,) five dollars, ($5,) ten dollars, ($10,) and twenty dollars, ($20,) and the word "gold" is marked beneath these figures, which figures and scale occupy about one-quarter of the face of the dial. Beneath this gold scale, above described, we place the scale for silver coins, which consists of the numerals five, (5,) ten, (10,) twenty, (20,) twenty-five, (25,) fifty, (50,) and one hundred, (100,) the latter representing one dollar, or one hundred cents, and the former figures from five cents to fifty cents. This scale is designated by the word "silver."

The hands or pointers B B' operate on a pin, C, upon the face of the dial, the outer end of which is split to receive a spring, D, which latter connects with the arm of the coin-holder E. To the lower end of the arm of the coin-holder is connected a bent pin, *a*, which operates in a slot made in the pointer or hand B', so as to give play to the coin-holder and take away that rigidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flattened piece of metal, and is bent over upon itself to form a slot, F, to receive the edge of a coin and retain it in position while being tested.

In practice we make the spring of such tension, and adjust the indicators or hands with reference thereto, that when a genuine piece of coin is put into the receiver or coin-holder the denomination will be registered or indicated by one of the pointers or hands upon the dial, either in gold or silver, as the case may be. For instance, if the coin be a five-cent piece the silver-indicating hand will point to and be in the exact line with the figure 5 on the dial, and so on from the smallest denomination to the largest, on both the gold and silver scales. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been tampered with, the hands will fall short of the figures or scales of the scale which the coin represents, and thus show to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that deception which is now so largely practiced in money exchanges.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin-receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin-holder E, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1877.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
C. W. M. SMITH,
WILLIAM BRADFORD.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 250,338, dated June 13, 1882.

(No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Coin Testers and Indicators; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section of our improved coin tester and indicator on the line *x x* of Fig. 2. Fig. 2 is a plan view of the dial and stand with coin connected. Fig. 3 is a detached section on the line *y y* of Fig. 2.

Similar letters refer to similar parts throughout the several views.

The dial A, constructed upon a metallic base, is provided with a series of raised gilt circles of the denomination of ten dollars and a half ($5.5), five dollars ($5.0), two dollars and a half ($2.5), two dollars ($2.0), one dollar ($1.0), and twenty cents ($0.20), and the word "gold" is raised between these circles, which figures and words stand on a quarter of the face of the dial. Between the gold—which, as here described, is given for example only—and the silver pieces, which commence the alternate five, ten, (10) twenty, (20) twenty-five, (25) fifty, (50) and one hundred, (100) the silver representing one dollar, or one hundred cents, and the lesser figures from five cents to fifty cents. The word is designated by the word "silver."

The indicating pointer B is operated on a pivot, C, near the face of the dial, the inner end of which is split to receive a spring, D, which latter is connected with the angle of the coin-holder L. To the lower end of the arm of the coin-holder is connected a lead pin, *a*, which operates in a slot made in the pointer or hand B, so as to provide for the coin-holder and indicator that rapidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flat and pierced metal, and is bent over upon itself to form a slot, F, to receive the edge of a coin and retain it or prevent its slipping behind.

In practice we make the spring of such a strength as to adjust the indicator or hand with reference thereto, that when a genuine piece of coin is put into the receiver or coin-holder the denomination will be registered or indicated by one of the points or hands upon the dial, either a gold or silver as the case may be. For instance, if the coin be a $20 gold piece the indicating hand will point to and be in the exact line with the figure 5 on the dial, and so from the smallest denomination of the largest, or into the gold and silver series. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been compared with the standard of the Government or mark of the mint which the coin represents, and there is shown to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that description of counterfeit money generally practiced in connection therewith.

Having thus described our invention, what we claim and desire to secure by Letters Patent is—

1. The dial A, provided with gold and silver pieces, and so on, in combination with the hands, pointers, or indicators operated by a spring, substantially as and for the purpose described, whereby a coin placed upon the coin-receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hand or pointer B, spring D, and coin holder L, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1881.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
C. W. M. SMITH,
WILMER BRADFORD.

(No Model.)

J. B. ATWATER.

COUNTERFEIT COIN DETECTOR.

No. 264,431. Patented Sept. 19, 1882.

Fig. 1.

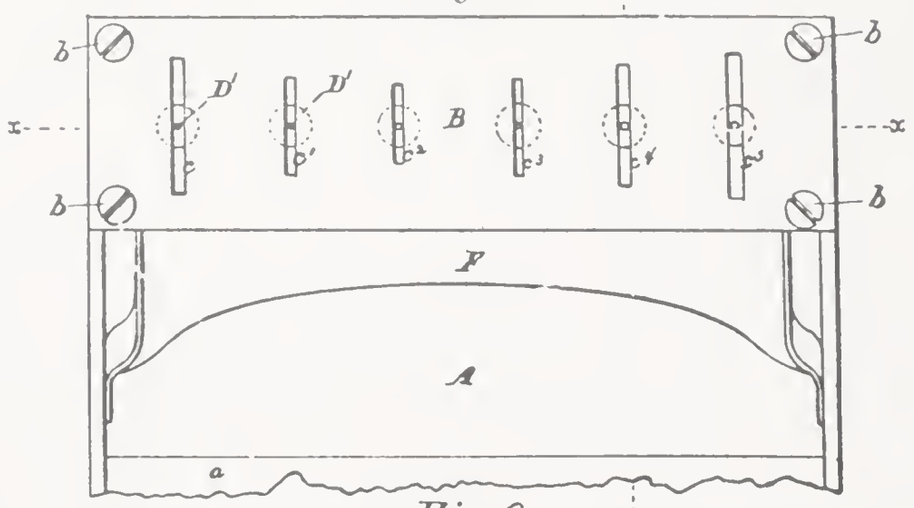


Fig. 2.

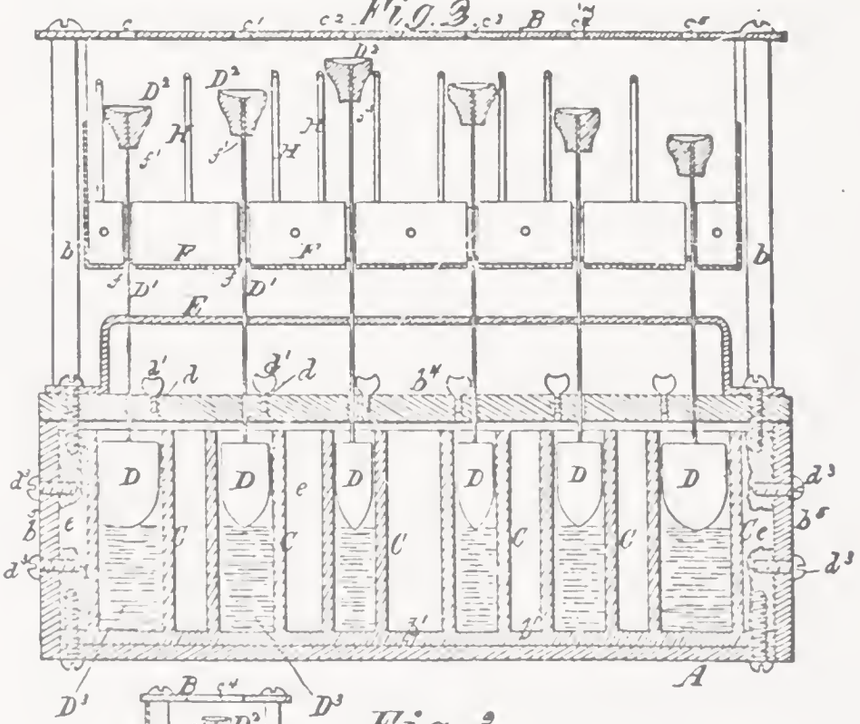
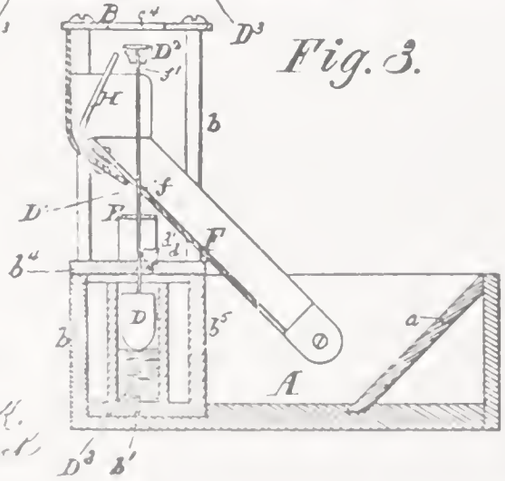


Fig. 3.



Witnesses:
Robt. S. Fennick.
C. Hedglen Fennick

Inventor:
John B. Atwater
by his Attys
Fennick and Lawrence

UNITED STATES PATENT OFFICE.

JOHN B. ATWATER, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTOR.

SPECIFICATION forming part of Letters Patent No. 264,431, dated September 19, 1882.

Application filed May 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ATWATER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Counterfeit-Coin Detector, of which the following is a specification.

My invention relates to a mach'ne which determines the genuineness of coins by measuring and weighing the same; and the nature of my improvements consist, first, in the combination of a series of tight cylinders or other shaped vessels supplied with quicksilver through a suitable plugged aperture, a series of weighing trays mounted at different altitudes upon suitable guide-stems of a series of conical or other suitably-shaped floats which rest upon the quicksilver within the said vessels, and a measuring table or plate provided with a series of slots of a length and width corresponding respectively to the diameter and thickness of the respective standard coins of the United States or other countries, this combination being such that the float-stems which support the weighing-trays hold the trays while empty at different distances below the horizontal plane of the slotted measuring-table, such relatively different distances being in accordance with the different diameters of the coins, while the amount of float-surface which is immersed in the quicksilver will be in proportion to the respective diameters and weights of the different coins placed upon the respective trays through the respective slots of the table; second, in a combination of the slotted measuring-table, overhanging rods for properly directing the descent of the coins after they are weighed, an inclined conducting-apron, vertically rising and descending trays applied on guided float-stems, and cylindrical vessels supplied with a fluid which retards the descent of the floats, and a coin-receiving box; and, third, in the combination of trays made adjustable on float stems with vessels containing quicksilver, whereby, in the event of any material change occurring in the density of the quicksilver from effects of temperature, the same may be compensated for by adjusting the altitude of the trays on the float-stems.

In the accompanying drawings, Figure 1 is a broken top view of the improved counterfeit-coin detector; Fig. 2, a vertical section in the line *x x* of Fig. 1, and Fig. 3 is a vertical section in the line *y y* of Fig. 1.

In said drawings, A represents a coin-receiving box, of rectangular or other shape, and having the forward portion of its bottom inclined, as at *a*, so as to cause the coins, after they are measured and weighed and caused to descend, to slide properly down upon the flat portion of the bottom of the box, and also to facilitate the removal of the coins from the box.

B is a measuring table or plate mounted upon standards *b* of the box. This table is a sufficient distance above the box to allow the weighing mechanism to be placed below it, and allow said mechanism to operate properly. Through the table or plate B a series of slots, $c\ c'\ c^2\ c^3\ c^4\ c^5$, are cut transversely of its length, and these slots are of a diameter and width respectively corresponding to the diameter and thickness, respectively, of twenty-dollar, ten-dollar, and five-dollar gold pieces, and one-dollar, fifty-cent, and twenty-five cent silver pieces, which pieces are of standard size and weight, those lettered $c\ c'\ c^2$ being for gold pieces and those $c^3\ c^4\ c^5$ silver pieces. The slots will only admit through the table or plates coins of standard size having a standard weight. Therefore, if a counterfeit coin of full weight is brought over either of the slots, its thickness or diameter will prevent it from passing through the slot. By this means counterfeit or alloyed coins of full weight are detected; but if the coins should be of less weight than the established standard they could be passed through the slots in the table, and hence the weighing mechanism now to be described is combined with the measuring table or plate.

The weighing mechanism which I have devised, and believe to be more accurate than a vibrating weighted beam, is as follows: A series of tight cylindrical vessels, C, of varying diameter and capacity, and supplied with quicksilver through apertures *d*, closed by screw-plugs *d'*, are cast upon a base-plate, *b'*, and connected and stayed by a web, *e*, and, if necessary, the whole inclosed by outer walls, b^5. These cylinders are placed within the coin-box A, directly under the slots of the plate or table B, and secured in position by screws d^2, as shown. The upper ends of the cylin-

ders are closed by a cap-plate, b^4, in which the apertures *d* and holes for the stems of the floats to move through are provided. Within these vessels cone-shaped floats D, which are respectively of little less diameter than the respective cylinders, are arranged so as to rest in their normal position upon the quicksilver D^3, as illustrated. The floats may be either of iron, steel, glass, ivory, hard rubber, or wood, or any other material to which the quicksilver will not adhere or by which it will be absorbed. The respective displacing-surfaces of these floats are to be proportioned to the diameter and weight of the coins to be weighed, as illustrated in the drawings. The floats are attached to stems D', which pass up through a guide-bar, E, and through slots *f* of a coin-conducting apron F, which is screwed to the coin-box and connected to a back plate of the table B, as illustrated. On the upper ends of the stems weighing-trays D^2 are fitted by means of screw-threads F', so that they can be raised or lowered according to the necessities of the case. The trays are arranged centrally under the slots of the measuring plate or table, and they stand respectively at such altitudes as will adapt them for weighing the different standard coins. In setting the trays for operation they may stand so as to require about one-half of the diameter of the respective coins to be passed below the surface of the table in order to rest the coins upon them, and the movement of the trays downward should be sufficient to allow the entire diameter of the respective coins to pass below the under side of the table or plate. This adjustment can be attained by making the stems of the floats for the different coins of different lengths and proportioning the diameter and capacity of the cylinders and the diameters and fluid-displacing surfaces of the floats with respect to the different coins to be weighed. By the use of quicksilver for the purpose described the great weight thereof is made available for keeping a portable counterfeit coin-detector steady while in use.

The inclined coin-conducting apron F is provided at its upper end with a series of separated overhanging directing-rods, H, which are arranged in close relation to the trays D^2—one on each side of a tray—and they serve for properly directing the coins downward upon the apron as soon as they descend below the under surface of the table or plate B.

In operating with this invention the coins are placed by the hand edgewise through the slots of the table B, and as soon as they rest on the trays they are released, when, if of the standard size and weight, they depress the tray, stem, and float, so as to pass entirely through the table and descend upon the apron into the box, being directed by the overhanging rods; but should any one of the coins be less than the standard weight, or a counterfeit, it will remain in the slot, either in consequence of its not being capable of depressing the tray, stem, and float upon which it is resting, or because its bulk has been so increased, in order to give it sufficient weight, by a baser metal than either gold or silver that it cannot pass through the slot. Thus whether a coin is too light and yet of standard metal, or too large on account of its being made heavy enough by a metal not of standard character, the fact will be detected.

In the event of any variation in the operation of the weighing mechanism occurring from change in the height of the quicksilver in the cylinders caused by extreme change of temperature, the same can be regulated by adjusting the trays up or down on the screw-threaded ends of the float-stems.

The great advantage in my weighing mechanism lies in the trays moving straight up and down against the quicksilver, also in its being very compact and regular in its operation. The quicksilver, offering great resistance and yet capable of flowing freely, admits of the machine being made quite small, yet capable of weighing the larger as well as the smaller standard coins with great accuracy, and the combination of a table with slots only adapted for coins of standard size with the weighing mechanism described enables the machine to arrest bogus coins and also coins of standard metal but not standard weight.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A coin-detector comprising in its construction a series of tight cylinders of relatively different diameter and capacity for containing a weighing-fluid—as quicksilver, for instance—a series of weighing-trays mounted at different altitudes upon the stems of a series of floats having respectively different amounts of fluid-displacing surface and being properly guided, and a measuring-table having slots corresponding to standard coins, substantially as and for the purpose described.

2. A coin-detector comprising a slotted measuring-table, overhanging directing-rods, an inclined conducting-apron, vertically-moving trays applied on guided float-stems, cylindrical vessels supplied with a fluid which acts against the floats in their descent, and a coin-box, substantially as described.

3. In a counterfeit-coin detector, floating trays which are adjustable by screw-threads on their stems, and vessels containing quicksilver, substantially as and for the purpose described.

JOHN B. ATWATER.

Witnesses:
CHAS. K. NICHOLS,
GUSTAVE TIDHOLM.

(Model.)

M. CLARKE.

COIN TESTER.

No. 273,667. Patented Mar. 6, 1883.

Fig. 1.

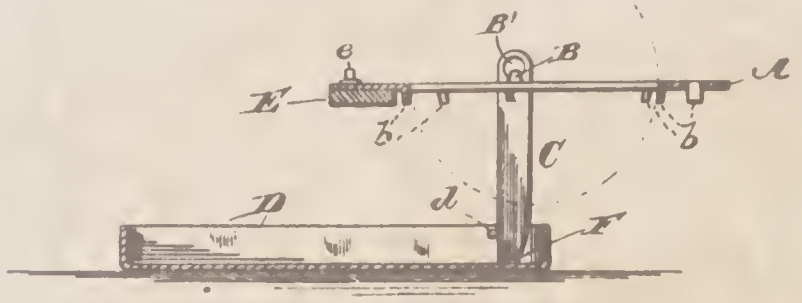


Fig. 2.

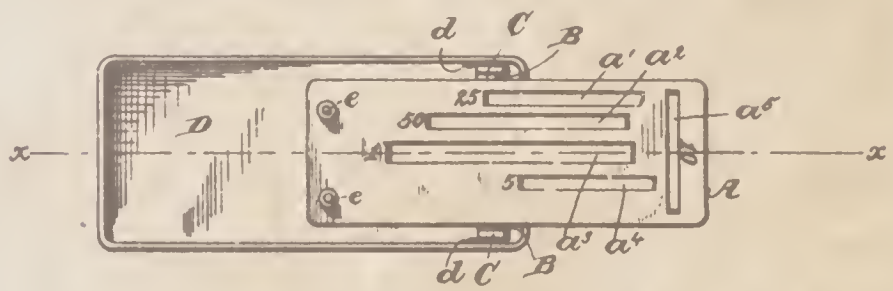


Fig. 3.

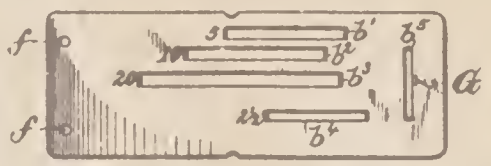
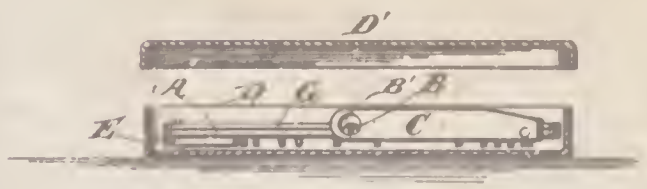


Fig. 4.



Witnesses.

Robert Everett.

Jos. L. Combs

Inventor.

Merritt Clarke.

By Chas. B. Tilden

Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

MERRITT CLARKE, OF POULTNEY, VERMONT.

COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 273,667, dated March 6, 1883.

Application filed March 10, 1881. (Model.)

To all whom it may concern:

Be it known that I, MERRITT CLARKE, a citizen of the United States, residing at Poultney, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Instruments for Detecting Counterfeit Coin, of which the following is a specification.

My invention relates to certain improvements in apparatus for determining the value and genuine character of coin by measurements of thickness, diameter, and weight.

To this end my invention consists, first, in a coin-balance suspended by bearings from folding standards or supports in such a manner that both may fold into the same horizontal plane, and thereby be so far reduced in size as to be easily portable, both standards and balance being received by or contained in a suitable inclosing box or similar device; secondly, in a supplemental balance-plate calculated for testing gold coins only, which is so constructed that it may be applied to or detached from the balance-supports; third, in a novel arrangement of the measuring and coin-supporting slots, whereby economy of space and material diminution of the balancing-weight is effected.

Referring to the drawings forming part of this application, Figure 1 is a longitudinal section. Fig. 2 is a plan view. Fig. 3 is a plan view of the balance-plate for gold coin detached. Fig. 4 is a central longitudinal section taken in the plane $x\,x$, Fig. 2, showing the manner in which the several parts are folded.

A in said drawings indicates a flat metallic plate, which may be constructed of brass, copper, or any other suitable metal, and of any desired dimension, although I have found by experience that a plate having a length of two and one-half ($2\frac{1}{2}$) inches and a breadth of seven-eighths ($\frac{7}{8}$) of an inch will fully answer the purpose. In such a plate I form slots longitudinally arranged, but of varying length and width, as shown at a', a^2, a^3, and a^4, Fig. 2, together with a transverse slot, a^5, to receive and measure silver coin of the several dimensions, as well as the nickel piece having a value of five (5) cents. These slots are cut with such accuracy as to afford a conclusive test of genuine coin, so far as the diameter and thickness of said coin is concerned, the length of each slot being such that it will admit a genuine coin until the upper edge or surface line of said slot shall cut the central point of the coin introduced, and thereby test its diameter, while at the same time its thickness is measured by the width of the slot. Each slot formed in the plate is provided at its ends with short lips or tongues $b\,b$, turned down from the metal of the plate A and depending from its under side. These lips are bent slightly toward each other in such manner as to grip the edges of the coin at the point where the surface-line of the slot cuts through the center of said coin, the latter being thereby supported in place until its weight is determined.

The plate A is provided with bearings B B, projecting from its sides at a point a little to one side of the center of said plate. These bearings are provided with knife-edges, and are received and supported by standards C C, each having a recess, B′, formed in its extremity, and adapted to receive the journal or fulcrum bearing of the plate A. These standards C C are pivotally attached to a platform, D, which may be made in the form of an open box of shallow depth, as shown, or in any other suitable style of construction. As the point of attachment of said standards is at or near one end of the support D, it is evident that by simply turning the pivoted standards down they may be folded, together with the balance-plate which lies between them, into substantial parallelism, and be thereby caused to lie within the support D, as shown in Fig. 4.

To one end of the plate A is attached a small weight, E, which serves to balance the coins as they are severally introduced. It is attached to the plate by riveting, and serves as a test-weight for coins of all the denominations now in use. It will be noticed that, with a single exception, the longitudinal slots in the plate A pass the fulcrum-bearings B B, each one of the three larger openings—viz., a', a^2, and a^3—lying partly upon one side and partly on the other side of said bearing-points. It is evident, therefore, that when a coin is placed in any one of said openings a certain portion of said coin will counterbalance an equal portion of the same coin lying upon the opposite side of the fulcrum-point. By this arrangement it will readily be seen that a part only of these

coins will be balanced by the weight E; but with ordinary accuracy in construction this test may be made extremely delicate, being even more sensitive than it would be if the entire weight of each coin were to be counterbalanced by a corresponding test-weight upon the opposite end of the plate. A convenient construction is to make the supporting-platform in the form of a shallow box, which may be provided with a cover, so that the entire device may, when folded, be inclosed by and carried in the vest-pocket, or, if desired, may be permanently set up upon an office-desk or counter, as shown in Fig. 1. In any form of construction it is necessary that the standards, when unfolded, shall occupy substantially a vertical position, in order that they may not be struck by the balance-plate as it vibrates. In order, therefore, to determine the proper position and to retain the standards therein, I employ the following construction: Said standards C C are connected at their lower ends by a plate, F, by which they are held in parallelism, said standards being so pivoted to the box that the plate F swings just above the floor thereof, the arrangement of the parts being such that as the standards are folded or unfolded its lower edge has friction upon the floor of the support D. This prevents the accidental dropping of the standards; and in order to determine their vertical position and to more effectually retain them therein I may form with a small punch a burr, *d*, in the vertical sides of the box D, each burr being so situated that when the standards are in a vertical position their edges are just clear of said burrs, as shown in Figs. 1 and 2. These burrs therefore serve both to determine the proper position of the standards as well as to sustain them more effectually in such position, sufficient friction being produced by the contact of the standards with said burrs to prevent their folding until sufficient pressure is given to overcome said friction.

The apparatus as thus described is adapted for testing silver coins and nickels only. To adapt it for use in testing gold coin, I provide a thin removable or supplemental plate, G, (illustrated in Fig. 3,) which in essential respects is very similar to the plate A. The slots or openings in the plate G are specially adapted, however, to testing gold coin of the several standard denominations, and the whole is so constructed that it may be laid upon the balance-plate A and adjusted in proper position. When so placed the slots in the plate G so far coincide with the openings in the plate A that coins placed in the former will pass down freely through the latter, the openings in the plate G being of less dimensions than those in the plate A. Moreover, the lips depending from the ends of the slots in the gold-testing plate will readily pass through the slots in the plate A, thereby allowing the former to lie flat upon the latter, it being held in proper position by pins or nipples *e e*, which engage with small perforations *f f* in the plate G. It will be seen that as the same weight or counter-balance E is used for both metals the position of the openings in the supplemental plate must be somewhat modified to compensate for the difference in weight between gold and silver. This difference in relative position is much less, however, than would be supposed, and rendered practicable by the greater length of the openings in the plate A. The relative arrangement of the openings in the two plates is shown approximately in Figs. 2 and 3.

It is evident that, instead of being adapted to lie upon the plate A, the gold-testing plate G may be provided with bearings similar to the bearings B B, and as the plate A may be readily dismounted by springing the standards C C slightly apart the plate G, having such bearings, might be readily mounted in its place. In the end of each plate opposite the test-weight I cut a transverse slot, (shown at a^5 in Fig. 2, and at b^5 in Fig. 3,) the former being adapted to receive and test the silver dime and the latter to receive and test the gold dollar.

The manner of using the apparatus is shown in Fig. 1, wherein the dotted lines indicate a genuine silver dollar placed in its appropriate slot. It will be seen that the length of said slot accurately gages the diameter of the coin, while its thickness is tested by the width thereof. At the same time the weight E counterbalances the preponderating portion of the coin upon the opposite side of the fulcrum-points B B.

It should be noted that coins of different dates do not always give the same weights or measurements, partly owing to loss by wear and partly to a slight difference in the amount of alloy. No difficulty will be found, however, in instantly determining the genuine from the counterfeit or from coins that have been filled or otherwise tampered with.

It will be noticed that the bearings B B are slightly raised above the upper surface of the plate, as shown in Fig. 1. They also have a true "knife-bearing." By this construction the proper poise of the plate is preserved and the weight-test is rendered extremely delicate.

In the apparatus thus described I provide a delicate and accurate test for determining the genuineness of coins of both metals and of all denominations. Its size is such that it may readily be carried in the vest-pocket; or it may be permanently erected upon an office-desk. The economy of space I effect by the peculiar arrangement of the slots in the test-plates, and also by causing the parts to fold into substantial parallelism, as shown in Fig. 4. The arrangement of the openings in the plate also promotes the accuracy of the weight-test, since part of each of the three larger coins is counterbalanced by a corresponding portion of said coin lying upon the opposite side of the fulcrum-points, thus leaving a small portion, comparatively, to be counterbalanced by the test-weight E. The degree to which the size and weight of the apparatus

are diminished by this construction will be readily perceived.

In the case of new coins which have not been subjected to use, it will be found that the milling occasionally leaves the edge of an unequal thickness, and that such coins will enter the measuring-slots with a little difficulty. With a little care, however, and by turning the coin, no difficulty will be experienced in determining its dimensions.

It is well, in using the apparatus, to introduce all coins with the date downward.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A coin-balance suspended in folding standards or supports, the latter being pivoted to a platform or receiving-box, whereby the parts may be folded into substantial parallelism, as and for the purpose described.

2. In a coin-balance adapted to test silver coin and nickels, the combination, with the balance-plate, of an attachable supplemental plate having openings adapted to determine the legal dimensions of gold coins, the latter being supported at the same time in said openings, for the purpose of determining their weight, substantially as and for the purpose described.

3. In an apparatus for testing coin, a balance-plate having openings of such size as to admit coins of different denominations, and thereby test their diameter and thickness, part of said openings being arranged longitudinally in said plate, and projecting upon both sides of a line drawn through the fulcrum-points of said plate, whereby a fractional portion of each coin upon one side of said line counterbalances a corresponding portion of the same coin upon the opposite side of said line, thereby leaving only a part of the coin to be balanced by the test-weight, substantially as and for the purpose described.

4. The combination, with the balance-plate having one or more measuring-openings, of a second adjustable plate having openings which so far correspond with those of the balance-plate as to permit the former to be applied to or mounted upon the latter for the purpose of testing coins of a different metal by means of the same balance, substantially as and for the purpose described.

5. The combination, with the folding standards in which the balance-plate is mounted, of a box to which they are pivoted, and within which said standards are adapted to fold together with the balance-plate supported by them, the several parts folding into substantial parallelism, as and for the purpose set forth.

6. The combination, with the folding standards which support the balance-plate, of a receptacle which serves as a platform or support, burrs or equivalent projections being formed upon the vertical sides thereof in such a position as to have frictional contact with the folding standards until the latter attain a substantially vertical position, as and for the purpose set forth.

MERRITT CLARKE.

Witnesses:
MARION P. CLARK,
EDWARD CLARK.

(No Model.)

E. C. PURNELLE.

COMBINED LETTER SCALE AND COIN TESTER.

No. 292,763. Patented Jan. 29, 1884.

Fig. 1

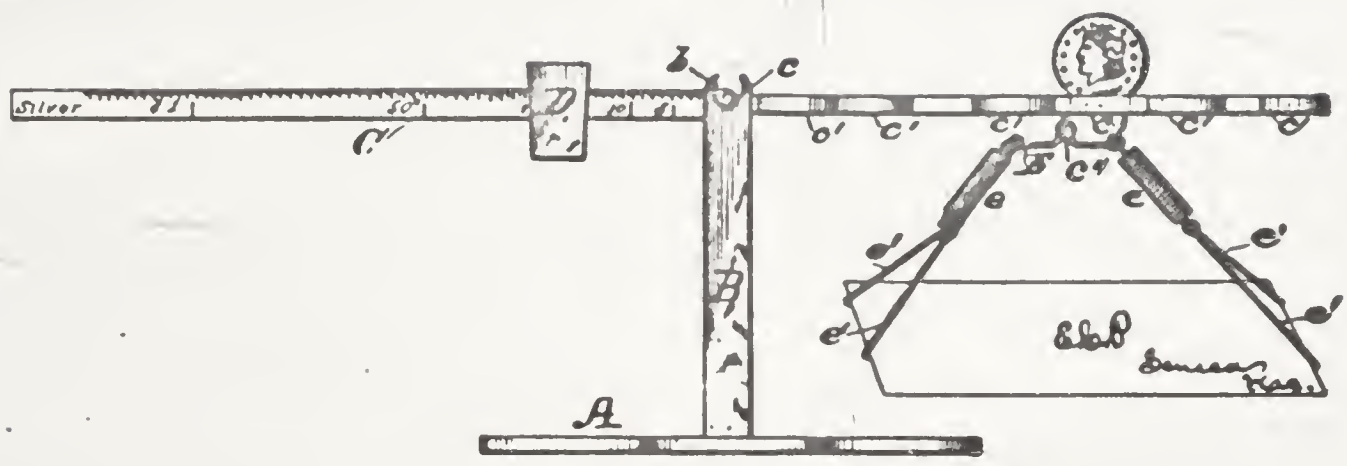
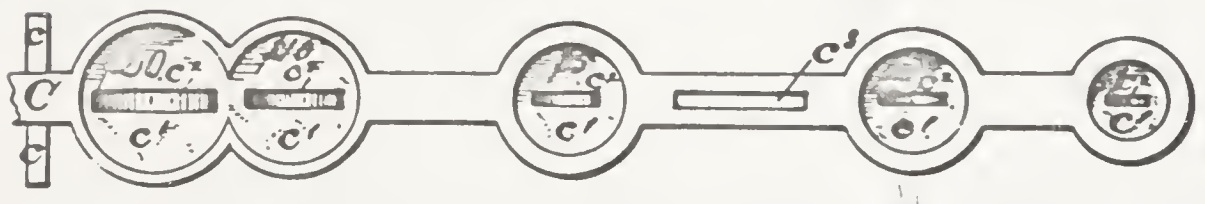


Fig. 2.



Witnesses:
L. C. Stills.
E. E. Mann

Inventor
E. C. Purnelle
By E. B. Stocking
Atty

UNITED STATES PATENT OFFICE.

EDWARD C. PURNELLE, OF SENECA, KANSAS.

COMBINED LETTER-SCALE AND COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 292,763, dated January 29, 1884.

Application filed July 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. PURNELLE, a citizen of the United States, residing at Seneca, in the county of Nemaha and State of Kansas, have invented certain new and useful Improvements in Combined Letter-Scales and Coin-Testers, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation of a letter scale and coin-tester constructed in accordance with my invention, and Fig. 2 is a plan of the coin-holding portion of the scale-beam.

Like letters refer to like parts in both figures.

A represents the base, and B the pedestal, either or both of which may be made of metal or glass, and in any design, according to the taste of the manufacturer. The pedestal is slotted or notched at its upper end to receive the beam C, and a transverse slot or groove, *b*, is formed for the reception and support of the knife-edged trunnions *c* of the beam. The beam is graduated to ounces and fractions of ounces, and also bears indicating-marks so located relative to the trunnions as to balance the weight of silver coins of the various denominations when one of such coins is in its proper place (slot c^2) in the coin portion of the beam, and when the weight D is at the proper one of said indicating-marks, as clearly indicated in the drawings. The coin portion of the beam is provided with circular depressions or cups c', each adapted to receive one denomination of gold coin, and within said cups are slots c^2, of a width equal to the coin which fits each of said cups, whereby any lacking in diameter or thickness of any coin placed therein is immediately detected, while a lack of weight in any such coin is indicated by the depression of the opposite portion of the beam when the weight D is at O. This latter result is accomplished in spacing the cups, or, in other words, locating them at such distances from each other that when the weight D is at O and a coin of gold is in its proper cup the beam is exactly balanced. At c^3 in the connecting-strip of two of the coin-cups is a slot, in which silver coin is placed edgewise, when its weight is to be tested by moving the weight D to the proper indicating-mark on the beam.

At c^4 and upon the under side of the coin-testing portion of the beam is a hook or other suitable device, upon which is placed a yoke, E, of wire or other suitable material, to either end of which are secured coiled springs *e*, each of which is provided with two independent hooks or grapples, e' e', these parts constituting the means employed for weighing letters and other mailable matter.

By the expansion of the springs *e* when under strain, the grapples e' are adapted to be placed in contact with articles of varied size, so as to automatically and firmly grasp and hold the same while being weighed.

Having described my invention and its operation, what I claim is—

1. The combination of the beam C, provided with silver-coin weight-graduations and gold-coin receptacles, spaced as described, and the weight D, substantially as specified.

2. The combination of the beam C, provided with the hook c^4, the yoke E, coiled springs *e*, and grapples e', substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD C. PURNELLE.

Witnesses:
R. M. EMERY,
R. T. LUDLOW.

(Model.)

E. BACHMANN.

COIN DETECTOR.

No. 285,204. Patented Sept. 18, 1883.

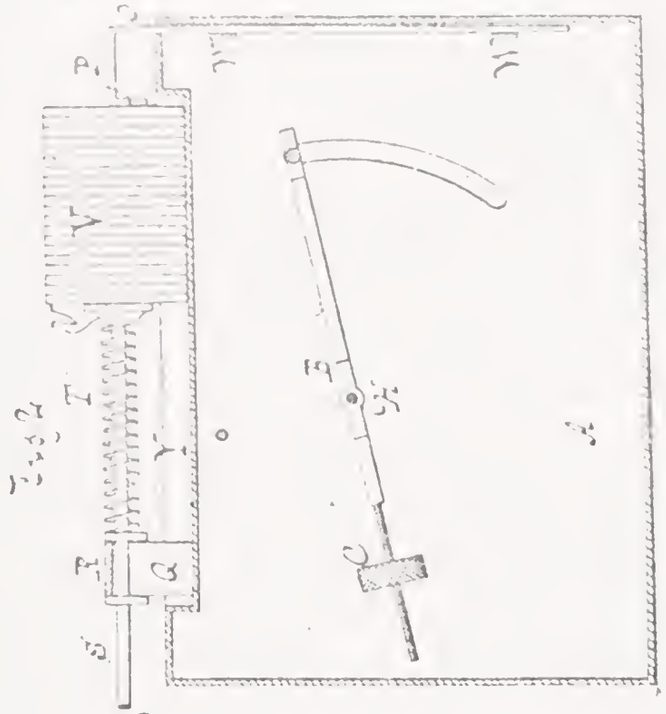


Fig. 2.

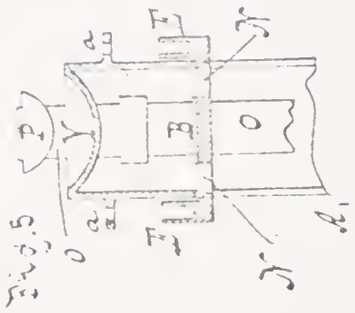


Fig. 5.

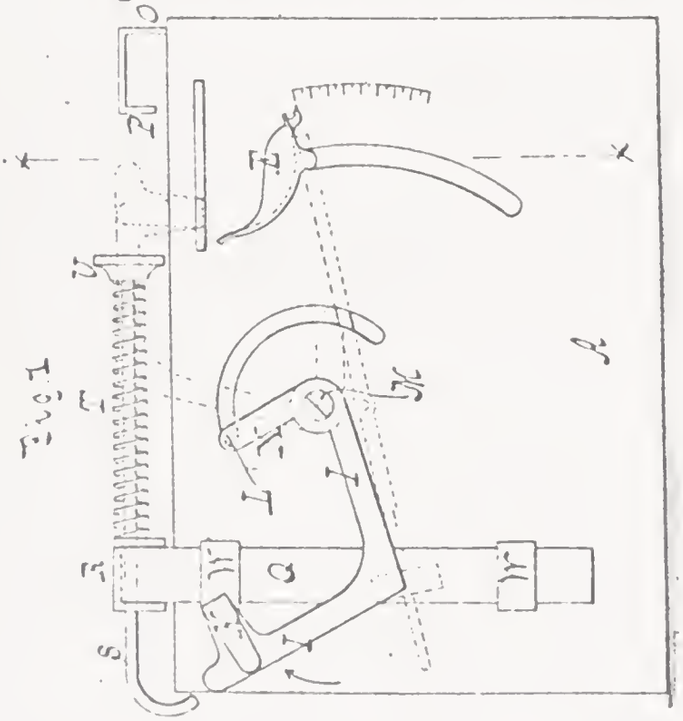


Fig. 1.

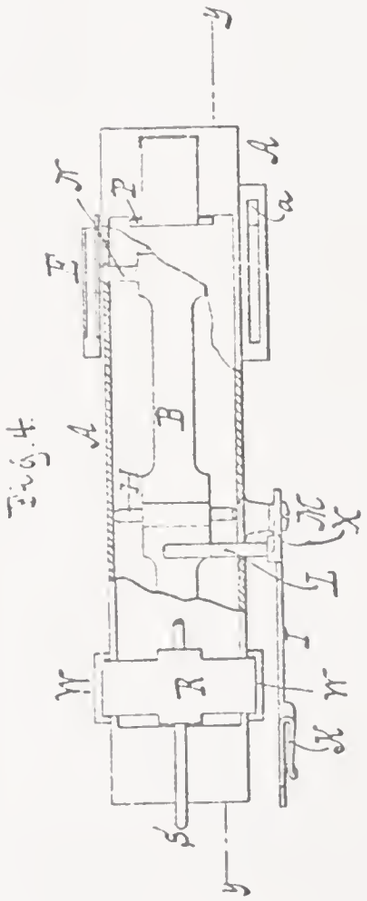


Fig. 4.

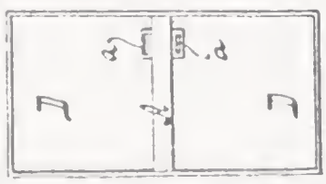


Fig. 3.

WITNESSES:

Otto Hufeland

William Miller

INVENTOR

Emil Bachmann

BY Van Santwood & Hauff

ATTORNEYS

UNITED STATES PATENT OFFICE.

EMIL BACHMANN, OF NEW YORK, N. Y.

COIN-DETECTOR.

SPECIFICATION forming part of Letters Patent No. 285,204, dated September 18, 1883.

Application filed June 14, 1883. (Model.)

To all whom it may concern:

Be it known that I, EMIL BACHMANN, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Coin-Detectors, &c., of which the following is a specification.

This invention relates to coin-detectors; and it consists in the combination, with a coin-tester, of a letter-weighing device, which may be brought into operative connection therewith; also, in providing such a detector with a coin-holder or roll, and in the novel features of construction and arrangement hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of the detector. Fig. 2 is a section in the plane *y y*, Fig. 4. Fig. 3 is a plan [illegible] of the detector and contiguous money-receptacles. Fig. 4 is a plan view of the detector with the inclosing-case partly broken away. Fig. 5 is a section in the plane *x x*, Fig. 1, partly broken away.

Similar letters indicate corresponding parts.

A indicates an inclosing-case, made of sheet metal or other suitable material. Within this case, about a fulcrum or pivot, H, swings or oscillates a lever, B, which is provided with a weight, C, which weight, being mounted on a screw-thread, as shown, may be adjusted nearer to or farther from the fulcrum H of the lever B, thus varying the efficiency of its action, as will be readily perceived. The other end of the lever B is provided with pans E E, supported on arms N N, projecting through slots in the case A, and said arms N N are placed at varying distances from the fulcrum or pivot H of the lever. The object of this arrangement is that the pan E, which is supported on the arm N nearer to the fulcrum or pivot H, will require a heavier coin to depress the lever B than that pan supported on the arm N farther from the pivot H. Each lever B is thus adapted for weighing coins of two different denominations, thus economizing space. In practice it will be well to make the arms N adjustable on the lever B by a screw-thread, or by a screw passing through a slot, or by any other means readily attainable by a mechanic, so that each arm N, with pan E, may be adjusted just such a distance from the fulcrum H as is necessary to enable the coin intended to be tested to depress the lever B sufficiently to allow the coin to drop off the pan into one of the respective receptacles D D, Fig. 3.

Above the pans E, and projecting from the side of case A, are slotted tongues, forming inlet-throats *a a*, Fig. 3, and these inlet-throats are made of such a width as to allow only a certain size of coin to pass through, for the weighing of which particular coin the pan E immediately under said throat *a* is to be adjusted. The device thus serves both as a coin-detector and as a gage.

The lever B is shown as being straight; but it may be curved or shaped in any desired manner.

Swinging about a pivot, M, at the side of the case is a scale-beam or lever-arms, I N, the arm N of which has a finger or stud, L, passing through a slot in a case, A, sufficiently far that when the lever-arms I N are swung up in the direction of the arrow, Fig. 1, to the position shown in dotted lines, the finger L will strike upon the lever B. The arm I is provided with a hook or attaching device, K, into which a letter or other article may be inserted, and the action of the finger L on lever B will cause such letter or articles to be weighed. The hook or attaching device K may be made adjustable at varying distances from the pivot M, so as to secure accuracy in the operation of weighing.

The top of case A is provided with a channel or holder, Y, in which may be placed coins V, Fig. 2. Sliding in guides W are arms or supports O Q. The arm O supports a washer or finger, P, while the arms Q support a bridge, R, through which slides a finger, S, provided with a washer, U. A spring, T, tends to force the washer U toward the washer P, thus compressing or holding a roll of coins, V, which may be placed between them, and keeping them ready for being done up in a paper wrapper, if desired, which paper wrapper may be placed in the channel Y under the coins V. The arms O Q, sliding in the guides W, allow the compressing device to be adjusted at varying heights from the top of the case A, or, if not in use, to be pushed down into the channel Y.

I am aware that it is not new to have a coin

detector and receiver combined, as such is shown in United States Letters Patent No. 203,719, of May 14, 1878.

The advantages of my device are that it can be made compact in form, taking up very little room and wasting no space, and it serves the various purposes of a money-drawer, money-gage, money-scale for varying denominations, money-roller, and letter-scale, while the adjustability of parts allows compensation for any wear of the apparatus.

What I claim as new, and desire to secure by Letters Patent, is—

1. A coin-detector consisting of the case having a weighted lever, B, carrying pans E E, arranged as described, and having the coin-holder consisting of a channel, Y, and compressors U P, each supported upon a vertically-adjustable arm or slide, substantially as described.

2. In a coin-detector, the combination, with the weighted lever B, of a bent arm, I, having clasp K, and pivoted upon shaft M, and the arm N, rigid with the arm I, having stud L, which rests upon the beam B when the arm I is turned into position for use, substantially as described.

3. In a coin-detector, the combination, with a weighted lever, B, provided with pans E, of arms or scale-beam I N, adapted to engage with said weighted lever B, substantially as and for the purpose set forth.

4. In combination with a coin-detector, a money-roller consisting of a holder or channel, Y, and compressors U P, arranged and adapted to operate substantially as set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

EMIL BACHMANN. [L. S.]

Witnesses:
W. HAUFF,
D. VAN SANTVOORD.

PATENT NUMBER	QUANTITY	CUSTOMER I.D.	SERV. CODE

ORDER SIZE	SEQUENCE	MO.	DAY
		C4	1C

PO-33, PATENT ORDER (Letter Unit)

IBM D77517

(No Model.)

E. KNIGHT.

LETTER SCALE AND COIN TESTER.

No. 388,138. Patented Aug. 21, 1888.

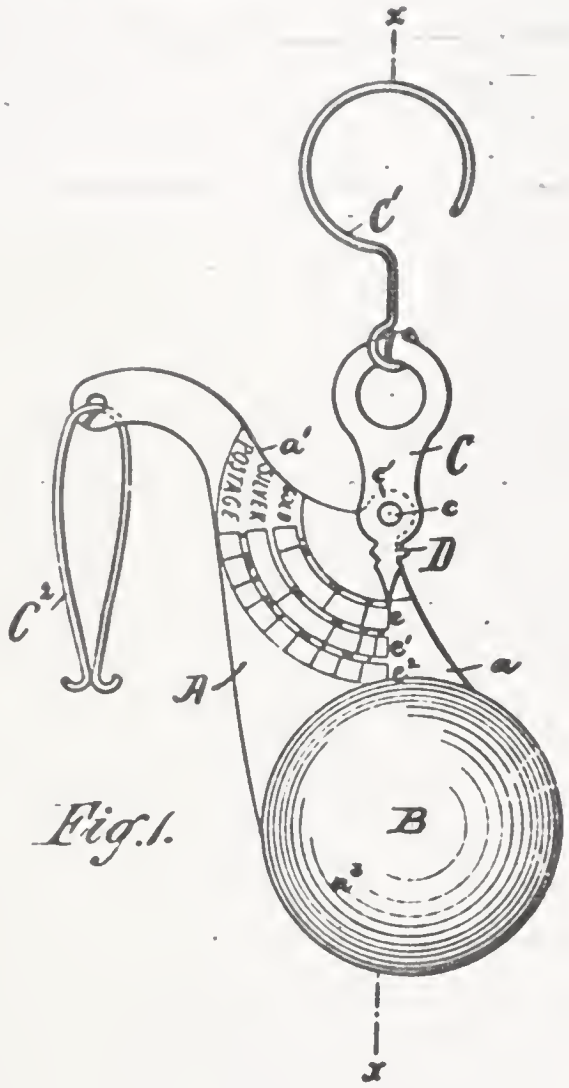


Fig. 1.

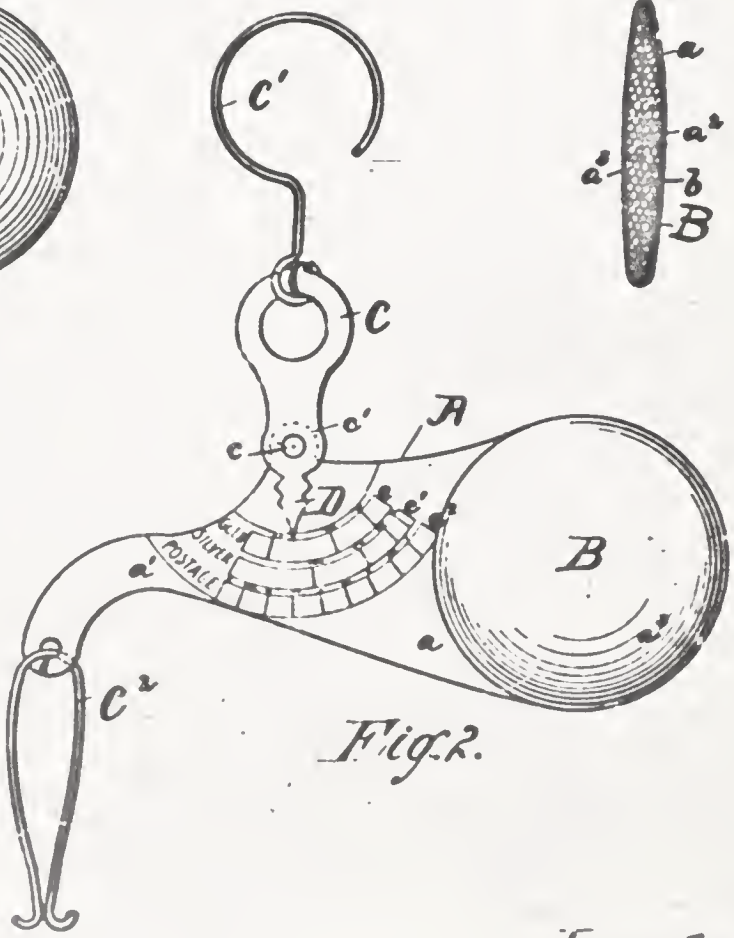


Fig. 2.

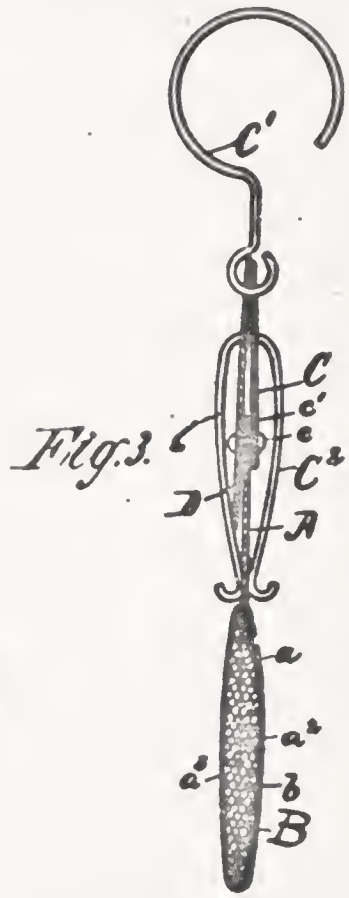


Fig. 3.

Witnesses.
M. Benjamin.
A. J. Fales.

Inventor.
Edgar Knight.
By Arden S. Fitch.
atty

UNITED STATES PATENT OFFICE.

EDGAR KNIGHT, OF SAYBROOK, CONNECTICUT.

LETTER-SCALE AND COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 388,138, dated August 21, 1888.

Application filed September 2, 1887. Serial No. 248,254. (No model.)

To all whom it may concern:

Be it known that I, EDGAR KNIGHT, of Saybrook, county of Middlesex, State of Connecticut, a citizen of the United States, have invented an Improved Letter-Scales and Coin-Tester, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a combined letter-scale and coin tester; and it consists in the combination of devices hereinafter described, and as more at length recited in the claim.

Figure 1 is a front elevation of the instrument containing my invention, and showing it at rest. Fig. 2 is a similar view of the same, showing it in the operation of weighing; and Fig. 3 is a longitudinal section on the line *x x*, Fig. 1.

A is the beam, consisting of a metal plate, which is pivoted to oscillate in a clip, C, by means of a pin, *c*, passed loosely through the beam at *c'* and through the clip. The upper end of the clip is perforated, as shown, so that the instrument may be suspended by the clip. The clip is desirably furnished with a hook, C', which is loosely linked into the perforated end of the clip as furnishing a convenient means for suspending the clip. The clip is preferably composed of two limbs, as shown, with the beam seated loosely between them. The portion *a* of the plate-beam A contiguous to the fulcrum pin *c* is wide faced or broad in extent, and upon this wide faced portion *a* I form or place indicator-scales *c c' c²*, one or more, each in the shape of or describing an arc of a circle of which the fulcrum-pin *c* is the center. The clip C is extended past the fulcrum-point *c*, and its extended end lies over the wide faced scale portion *a* of the plate-beam, and constitutes a pointer, D, which ranges over said portion *a* of the beam when the beam oscillates in the clip.

One end of the plate-beam is weighted, as at B. This may be effected by forming a concavity, *a²*, in the plate, placing therein a corresponding weight, *b*, and then covering the weight with a cap, *a³*. A beam of desirable appearance is thus produced. The opposite arm *a'* of the beam is provided with a hobber, C², in the form, preferably, of a spring-wire clip linked loosely to the end of said arm. The arm *a'* is desirably narrow, as shown, and has a downward curve at its free end.

The indicator-scales *c c' c²*, each or all, are so arranged on the portion *a* of the beam relatively to the pointer D that when the beam gravitates to rest in the suspending-clip C the said pointer will indicate zero on the scale or scales. The scale *c²* may then be marked or graduated to indicate ounces and fractions thereof for use in weighing postal matter, while the scales *c c'* may be graduated to indicate the correct weight of gold and silver coins, respectively, as shown in the drawings.

Heretofore in constructing postal and analogous scales of this description—namely, with a suspended beam, a suspending-clip, and a weighted arm on said beam—the indicator scale or scales have been placed upon the face of the extremity of the weighted arm, and an independent pointer has been loosely pivoted upon the face of said arm and allowed to gravitate over said scale or scales for the purpose of indicating the weight of articles suspended on the opposite arm; but in operating scales thus constructed the pointer is exceedingly liable to get out of proper adjustment relatively to the indicator-scales on the weighted arm, and therefore to indicate inaccurately on the scales. By means of an apparatus constructed as I have herein described, the pointer being a part of the suspending-clip C and ranging over the scale portion *a* of the beam all liability of inaccuracy is obviated.

I do not claim, broadly, herein the combination, with a pointer carried by the suspending-clip, of a graduated beam over which said pointer ranges, as I am aware that such devices are not new. I intend to limit my claim hereunder to the combination, with the peculiar scale beam shown, consisting of a plate fulcrumed at one edge, between its ends, in a suspending-clip and having one end weighted, of an indicator scale or scales in the form of an arc of a circle of which the fulcrum is the center, on said plate-beam, and a pointer constituted by an extension of the suspending-clip and ranging over the arc scales on said beam.

What I claim as my invention, and desire to secure by Letters Patent, is—

In weighing scales, the combination of the

plate A, constituting the scale-beam, and pivoted or fulcrumed at one edge between its ends to the suspending clip C, and provided with the weight B and the clip C' at opposite ends of said beam, respectively, and having a graduated scale, one or more, in the form of the arc of a circle of which the fulcrum is the center on its side face, as described, with a pointer, D, constituted by an extension of the suspending-clip over the side face of the beam, and adapted to range over the graduated scale, as and for the purpose specified.

EDGAR KNIGHT.

Witnesses:
HENRY KNIGHT,
JOSEPH KELLOGG.

(No Model.)

C. RICHTMANN.

COIN AND LETTER SCALE.

No. 295,809. Patented Mar. 25, 1884.

Fig. 1.

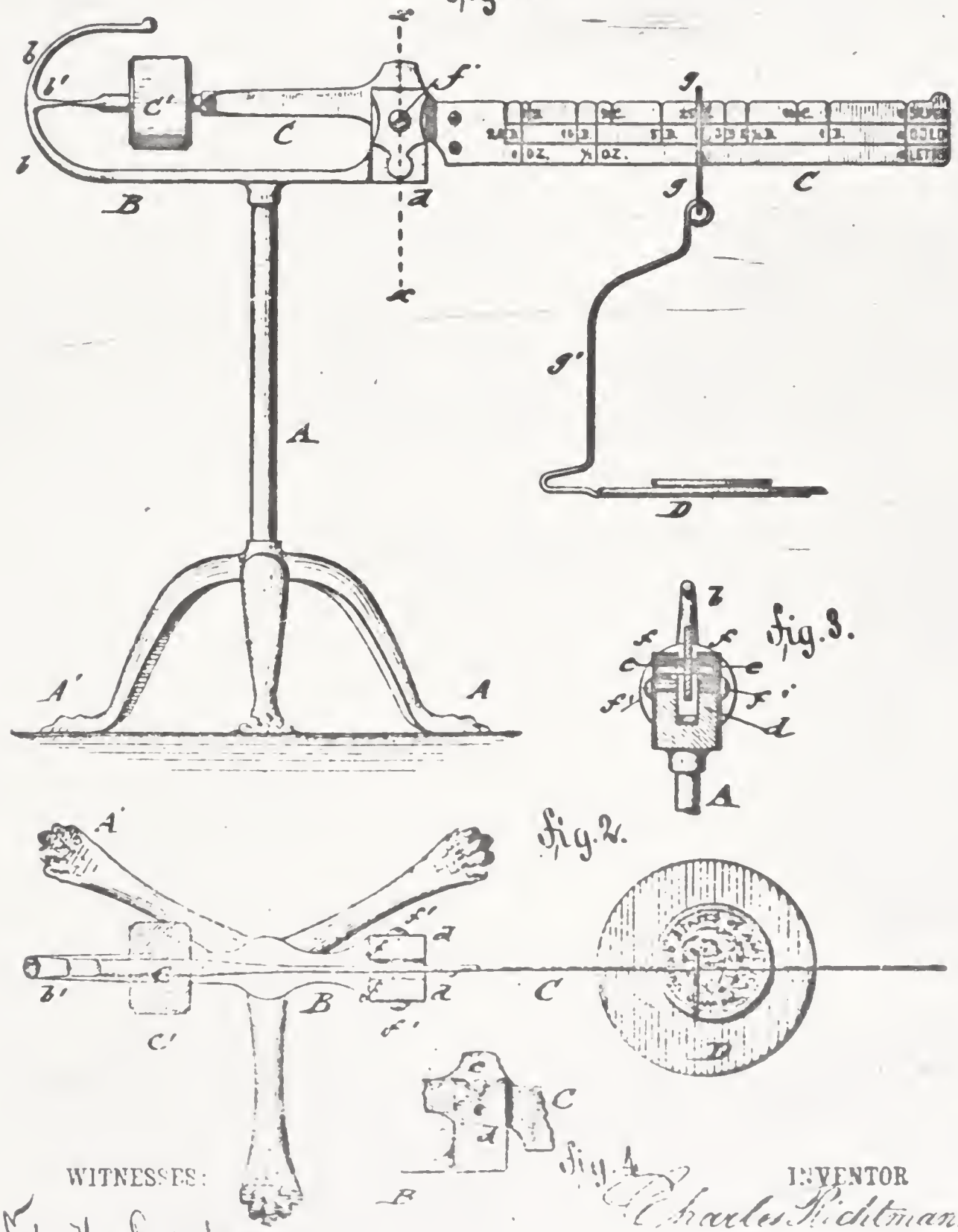


Fig. 3.

Fig. 2.

Fig. 4.

WITNESSES:

E. H. Goodman

Otto Bisch

INVENTOR

Charles Richtmann

BY Geo. H. Graves

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES RICHTMANN, OF NEW YORK, N. Y., ASSIGNOR TO H. RICHTMANN & CO., OF SAME PLACE.

COIN AND LETTER SCALE.

SPECIFICATION forming part of Letters Patent No. 295,809, dated March 25, 1884.

Application filed October 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RICHTMANN, of the city, county, and State of New York, have invented certain new and useful Improvements in Coin and Letter Scales, of which the following is a specification.

This invention has reference to an improved coin and letter scale, which, in contradistinction to the letter-scales heretofore in use, is made with one fulcrum only and capable of a high degree of accuracy.

The invention consists of a supporting-standard having a horizontal bar that has a hooked-shaped guard at one end, provided with a central index-point for the inner weighted end of the oscillating scale-beam, and that has at the other end bearings for the knife-edge pivots of the same. The outwardly-extending opposite end of the scale-beam is provided with graduations and notches for coins and letters of certain weights, which graduations extend inwardly from the outer end toward the fulcrum, while the notches serve for recessing the sliding link of a scale-pan suspended from the beam.

In the accompanying drawings, Figure 1 represents a side elevation of my improved coin and letter scale. Fig. 2 is a plan of the same, partly in section. Fig. 3 is a detail vertical transverse section on line $x\,x$, Fig. 1; and Fig. 4 is a detail side view, showing the bearings and knife-edged pivots of the beam-scale.

Similar letters of reference indicate corresponding parts.

A in the drawings represents an upright supporting-standard, which is supported on feet A′ or on a suitably-weighted base.

To the upper end of the standard A is applied a horizontal arm, B, which is bent at one end into the shape of a semicircular hook or guard, *b*, at the center of which is arranged an inwardly-extending index or pointer, *b′*. At the opposite end of the horizontal arm B are arranged vertical bearings *d d* for the knife-edged pivots *e e* of a scale-beam, C, which is made tapering at the end adjoining the index *b′*. A weight, C′, is arranged at the inner end of the scale-beam C, which is adapted to oscillate vertically between the end of the hook or guard *b* and the horizontal arm B, which acts thereby as stops to limit the oscillations of the scale-beam. The bearings *d d* are provided with tapering recesses *d′* for the knife-edged pivots or fulcrum *e* of the scale-beam, which pivots are retained in said recesses *d′* by angular cap-plates *f f*, which are secured by fastening-screws *f′* to the outside of the bearings *d d*, their upper ends lapping over the bearings *d d* and the pivots *e e* of the scale-beam, as shown in Fig. 3. By this arrangement the scale-beam is retained in position, and cannot be removed from the horizontal supporting-arm B. The outer end of the scale-beam C is provided with a series of graduations or scales extending from the zero-line near the outer end of the beam toward the fulcrum thereof. The upper series or scale, C′, is arranged to indicate the weights of silver coins, the middle scale, C², to indicate the weights of gold coins, and the lower scale, C³, is graduated to serve as a letter-scale. The graduations of the upper scale are marked, respectively, "10 c." for ten cents, "25 c." for twenty-five cents, "50 c." for fifty cents, and "1 D." for one dollar, and the upper edge of the scale-beam is provided with notches corresponding with these graduations. The graduations of the middle scale are marked "1 D." for one gold dollar, "2½ D." for a quarter-eagle, "3 D." for a three-dollar gold-piece, "5 D." for a half-eagle, "10 D." for an eagle, and "20 D." for a double-eagle, and the upper edge of the scale-beam is provided with notches to correspond with these graduations. The graduations of the lower scale are marked "½ oz." for one-half ounce, "1 oz." for one ounce, and the upper edge of the beam is provided with notches to correspond with these graduations. A slotted slide-link, *g*, is placed on the beam, and a suspension-arm, *g′*, supporting a scale-pan, D, is attached to the lower end of said slide-link. If the slide-link be placed in the notch of the graduating-line indicating a half-eagle, and one of the latter be placed in the scale-pan, the beam will remain balanced, if the half-eagle be a genuine one, the index *b′* serving to indicate the slightest deviation. If any other gold coin or a silver

coin or a letter be placed on the scale-pan and the slide-link adjusted to its proper position, according to the article being weighed, the beam will respond in a very accurate manner, the tapering end of the beam, in connection with the index *b'*, being in alignment when the beam is balanced.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A scale for coins and letters, comprising a supporting-standard, a horizontal supporting-arm attached to said standard, provided with a hook-shaped guard having an inward projection or index at the center of the hook, a scale-beam pivoted in said bearings, one end of which is provided with a weight and adapted to oscillate within the hook-shaped guard, being in alignment with the index thereof when balanced, the outer end of said beam being graduated, a slide-link on said scale-beam, and a scale-pan suspended from said link, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES RICHTMANN.

Witnesses:

PAUL GOEPEL,

SIDNEY MANN.

No. 645,185. Patented Mar. 13, 1900.

T. I. PORTER.

COIN DETECTOR.

(Application filed Aug. 17, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

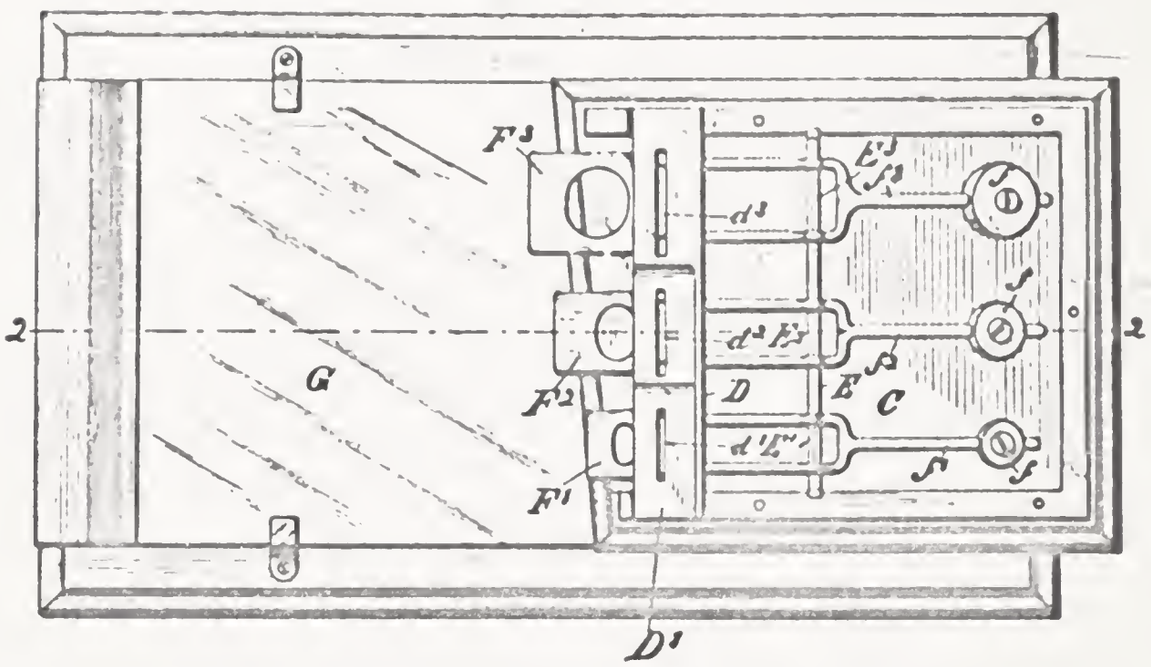
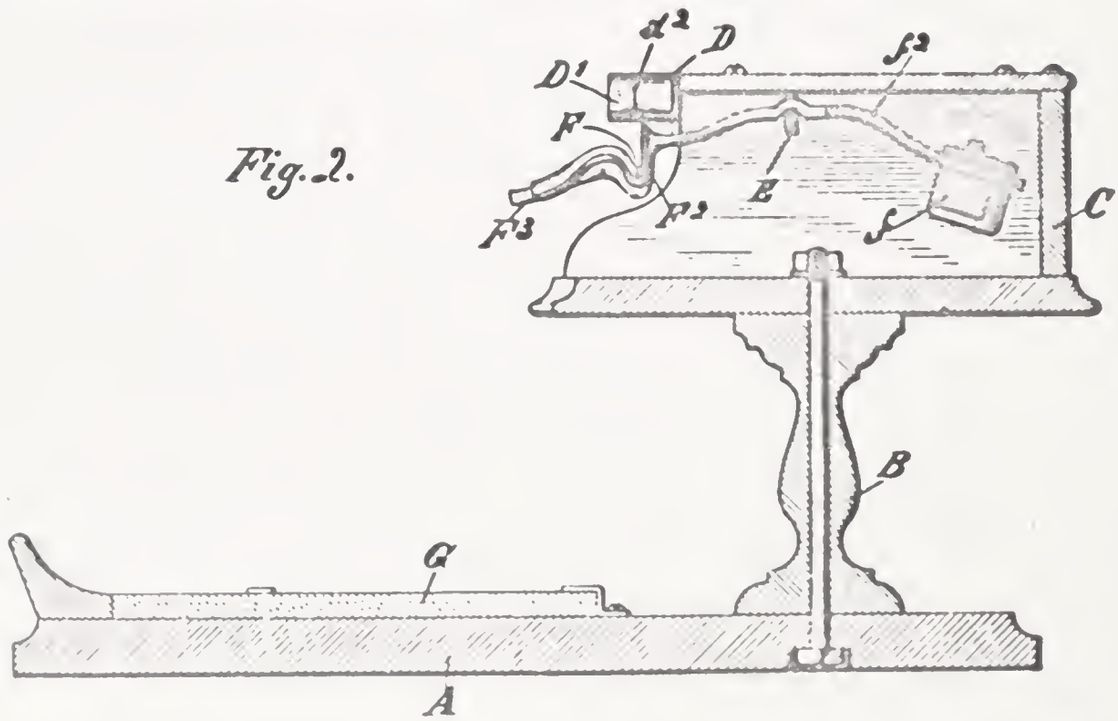


Fig. 2.



Witnesses:
W. C. Codies
W. H. Colton.

Inventor:
Thomas I Porter
By Emery & Hopkins
Attys.

No. 645,185. Patented Mar. 13, 1900.

T. I. PORTER.

COIN DETECTOR.

(Application filed Aug. 17, 1899.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

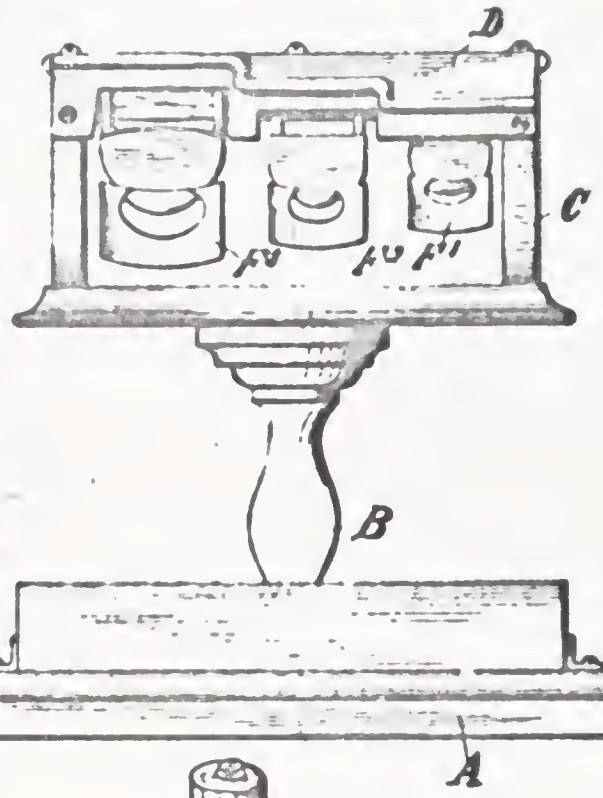
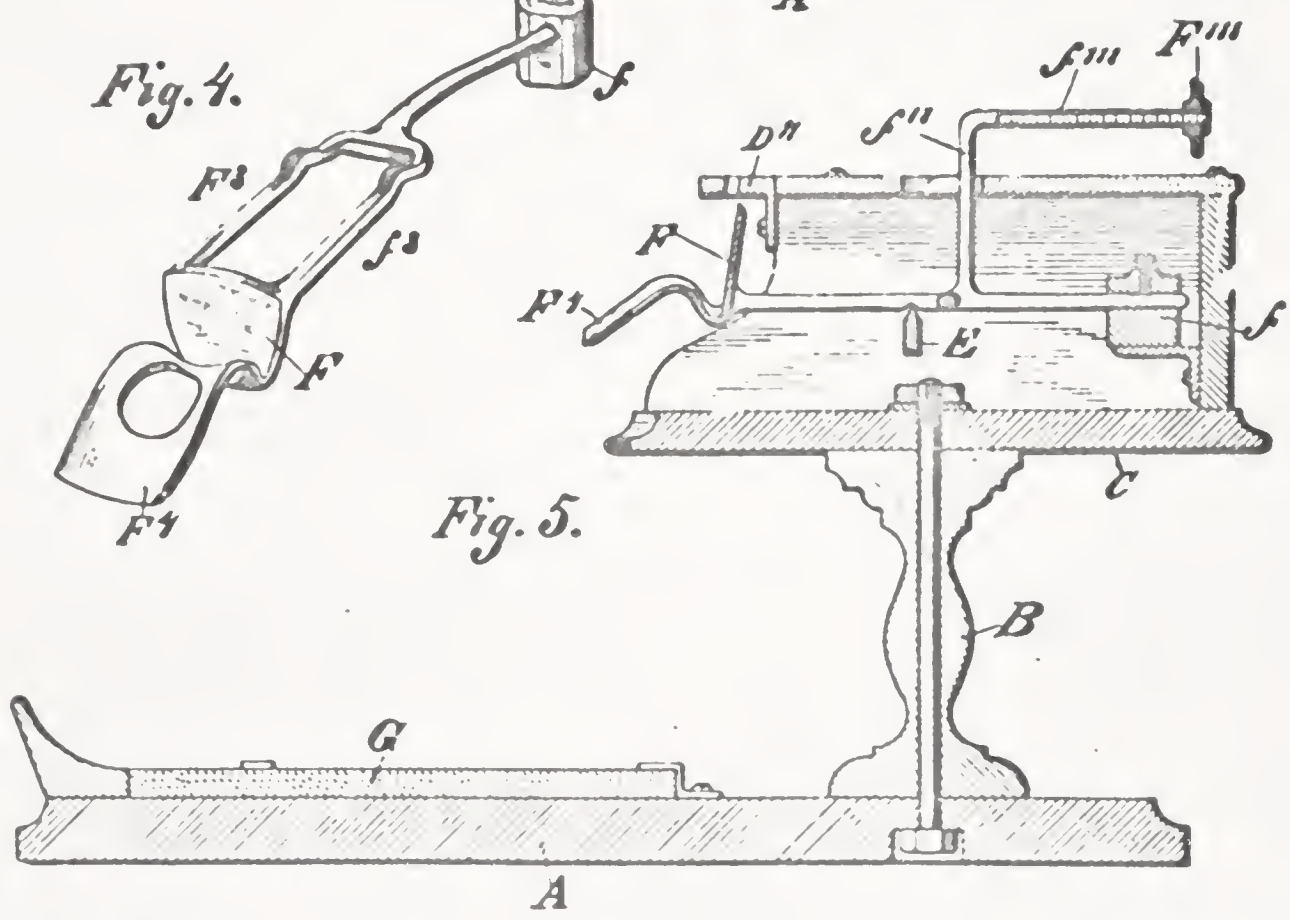


Fig. 4.

Fig. 5.



Witnesses:
H. C. Coolidge
W. H. Cotton.

Inventor:
Thomas I. Porter
By Emery & Hopkins
Attys.

UNITED STATES PATENT OFFICE.

THOMAS I. PORTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE RAND, McNALLY & COMPANY, OF SAME PLACE.

COIN-DETECTOR.

SPECIFICATION forming part of Letters Patent No. 645,185, dated March 13, 1900.

Application filed August 17, 1899. Serial No. 727,500. (No model.)

To all whom it may concern:

Be it known that I, THOMAS I. PORTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Detectors, of which the following is a specification.

The object of the present invention is to provide a simple and efficient device for quickly testing coin as to size, weight, and ring with a view to detecting counterfeits. In carrying out this object, for testing the size of the coin a slot is used, and this slot is disposed immediately above a balance and in such relation thereto that as the coin leaves the slot by which its size is tested it passes immediately to the balance, by which it is tested as to its weight. The balance has a depressible coin-rest, and the depression of this rest is resisted by a force a trifle less than the correct weight of the coin to be tested, so that when a coin of the proper weight is delivered to the coin-rest the latter will be depressed, albeit it will not respond to a coin of insufficient weight. As the rest is depressed by the weight of the coin it discharges the coin by tipping it over sidewise onto a sounding board or table, by which its ring is tested, the rest being provided with an extension by which the coin is flipped or turned in order to insure its striking on one of its flat faces. With this arrangement in order to make the three tests it is simply necessary to insert the coin in the appropriate slot of the machine, and if it is genuine it will pass in rapid succession from one test to the next until the three are completed. The machine is provided with a slot and balance for each denomination of coin that is to be tested.

With silver coin it is seldom desired to ascertain the exact weight in case the test shows it to be light, whether it is or is not light being in most cases all that it is desired to know; but in the case of gold coin it is sometimes desirable when a light coin is found to ascertain exactly what its weight is. To this end the balance in the preferred form of the invention is provided with a graduated arm, which has a weight mounted adjustably thereon, so that the exact weight of the coin or its deficiency may be determined.

The invention consists in the features of novelty that are hereinafter fully described with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a plan view of a coin-detector embodying some features of the invention, the specific embodiment here shown being a detector designed more especially for silver coin. Fig. 2 is a vertical section thereof on the line 2 2, Fig. 1. Fig. 3 is a front view thereof with all of the coin-rests of the balances depressed. Fig. 4 is a perspective view of one of the balances. Fig. 5 is a vertical section of a coin-detector embodying the invention in what is hereby elected as the preferred form of the invention for the purposes of this application.

A represents a base, from which rises a standard B, surmounted by a box C, the top of which is omitted from Fig. 1 in order to show the balances. Secured to the front of the box and crossing it from side to side is a plate D, having a horizontal flange D' stepped or offset vertically, each step or offset being provided with a slot of the size appropriate for measuring a coin of a given denomination, said slots being designated d', d^2, and d^3, respectively. Crossing the box in the rear of the plate D is a fulcrum-bar E, having knife-edge bearings E', E^2, and E^3, upon which the beams f' f^2 f^3 of three balances F' F^2 F^3 are mounted to oscillate. Each of these balances comprises a beam, (f', f^2, or f^3, as the case may be,) a weight f, carried by the beam on one side of the fulcrum, and a coin-rest F, carried by the beam on the other side of the fulcrum. The coin-rest is so constructed that when in its initial position it supports the coin on edge and in a plane which is parallel with the axis of oscillation of the balance, and when depressed it dumps the coin off sidewise as distinguished from allowing it to roll out edgewise. To these ends the coin-rest has a seat for the coin, the general direction of which is parallel with the axis of oscillation and which is curved to conform more or less exactly to the periphery of the coin, a high rear wall which serves to support the coin on edge, and a front wall which slopes toward the seat for the purpose of guiding each coin to exactly the same place thereon

and which is low in order to allow the coin to tumble over it when the center of gravity of the coin passes the vertical plane of the seat. The coin-rest of each balance is disposed directly beneath one of the slots, and the distance between the bottom of any given coin-rest and that portion of the flange D' through which the corresponding slot is made is a trifle less than the diameter of a coin of the denomination appropriate to the slot and rest in question. This being so, should a coin being tested be too light it will not depress the rest, and the engagement of the coin with the flange D' will prevent the coin from falling out of the rest. On the other hand, if the coin undergoing test is of proper weight it will depress the rest, and as soon as its upper margin escapes from engagement with the flange D' the coin will fall forward onto a sounding board or table G, which preferably consists of a glass slab. It is not, however, essential to use a separate slab as a sounding-board; but, on the contrary, if desired, the base A may be used for the purpose. In this connection A may be considered as representing either a base forming a part of the apparatus or the top of a desk, table, or counter on which the apparatus is mounted.

In order to cause the coin to fall on one of its flat faces, each of the coin-rests is provided with an extension which forms a continuation of the front wall of the rest and is curved on its top side, the extensions of the several rests being indicated by the letter F⁴.

As before stated, it is seldom desired to ascertain the exact weight of a light silver coin, and hence for testing silver coin a machine constructed as above described will answer every purpose; but for gold coin more exactness is required, and it is sometimes desirable to ascertain the exact weight of the coin or the exact amount of its deficiency. To these ends it is necessary to prevent the frictional contact of the coin with the sides of the slot or with any other part of the machine while the coin is being weighed, (otherwise the result indicated by the weighing apparatus will be inaccurate to the extent of the friction,) and it is necessary to provide the balance with an adjustable weight. In order to prevent frictional contact of the coin with any part that would prevent its being accurately weighed, the coin-rest is preferably made, as shown in Fig. 5, with a rear wall that inclines slightly from the vertical, (the rest being in other respects as already described with reference to the preceding figures,) so that in the initial condition of the balance the coin will keep its place on the rest without support from any other part, and, in fact, will not leave it until the end of the beam carrying the rest has been depressed sufficiently to throw the center of gravity of the coin past the vertical line drawn through its supporting-point on the rest.

In the form of the invention shown in Fig. 5 the slots for receiving the coin are made through a plate D'', which is without offsets. The top of this box is provided also with an opening, through which extends an arm f'', rising from the beam of the balance and having a laterally-projecting branch f''', on which a weight F''' is adjustably mounted, the arm f''' being provided with appropriate graduations or a scale for indicating the weight or the deficiency in the weight of the coin. In this form of the invention the coin during the test for weight is without contact with any part of the machine excepting the coin-rest itself, and therefore friction is entirely eliminated. If the coin is of the proper weight, the balance, as in the case of the testing-machine shown in Figs. 1 to 4, inclusive, will respond to the weight of the coin and the coin will be dumped onto the sounding-board. On the other hand, if the coin be of insufficient weight the balance will not respond, and thereafter the exact weight or the exact insufficiency in the weight (depending upon the character of the scale on the branch f''' of the arm f'') may be ascertained by adjusting the weight F''' until the coin balances. Otherwise the machine shown in Fig. 5 is practically the same as that shown in Figs. 1 to 4, inclusive.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, and a weight carried by the beam on the other side of the fulcrum and adapted to prevent the depression of the rest by a coin of insufficient weight while permitting its depression by a coin of proper weight, said coin-rest having means for supporting the coin on edge in a substantially-vertical plane parallel with the axis of oscillation of the beam, means for preventing the coin from rolling off of the side of the beam, and means for discharging the coin sidewise at the end of the beam when the coin-rest is depressed, substantially as set forth.

2. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, and means for preventing the depression of the rest by a coin of insufficient weight, said rest having a seat for the coin disposed substantially parallel with the axis of oscillation, a rear wall for supporting the coin on edge, and a low front wall over which the coin falls sidewise when the rest is depressed, substantially as set forth.

3. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, and means for preventing the depression of the rest by a coin of insufficient weight, said rest having a seat curved to conform to the periphery of the coin and dis-

posed substantially parallel with the axis of oscillation, a substantially-vertical rear wall adapted to support the coin on edge in a substantially-vertical plane parallel with the axis of oscillation, and a low front wall sloping toward the seat, substantially as set forth.

4. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, means for preventing the depression of the rest by a coin of insufficient weight, said rest having means for supporting the coin on edge and in a plane parallel with the axis of oscillation, while the rest is in initial position, and means for discharging the coin sidewise when the rest is depressed, a sounding-board arranged to receive the coin after it is discharged, and means carried by the rest for flipping the coin, substantially as set forth.

5. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, said rest having a seat for the coin disposed substantially parallel with the axis of oscillation of the beam, a rear wall for supporting the coin on edge, and a low front wall sloping toward the seat, a sounding-board adapted to receive the coin as it falls, and a curved projection forming an extension of the front wall of the rest, substantially as set forth.

THOMAS I. PORTER.

Witnesses:
L. M. HOPKINS,
BERTHA C. SIMS.

March 31, 1925. 1,531,642

L. BRAGIN

[illegible]

Filed [illegible]

Fig. 1.

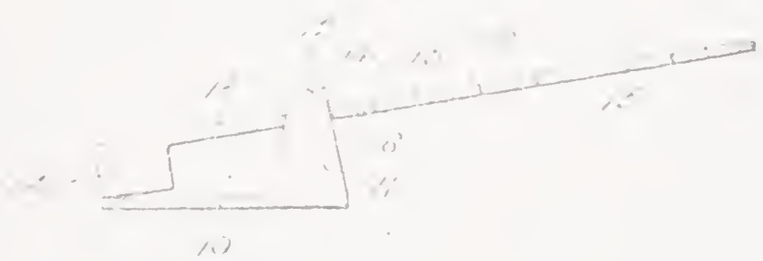


Fig. 2.

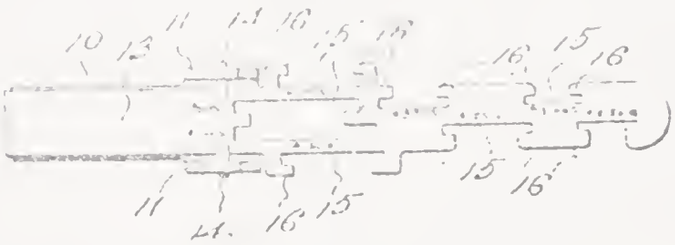


Fig. 4.

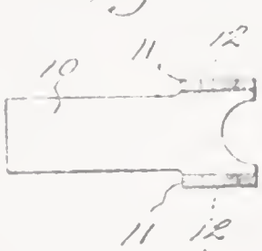
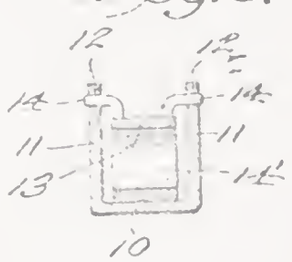


Fig. 3.



Leopold Bragin, Inventor
W. Bragin, Administrator for
the estate of Leopold Bragin, deceased

By Victor J. Evans
ATTORNEY

M. Mary Dunaly.

WITNESS.

Patented Mar. 31, 1925. 1,531,642

UNITED STATES PATENT OFFICE.

[illegible]

[illegible]

[illegible]

(No Model.)

W. W. HAAS.

COIN COUNTER AND TESTER.

No. 314,330. Patented Mar. 24, 1885.

Fig 1.

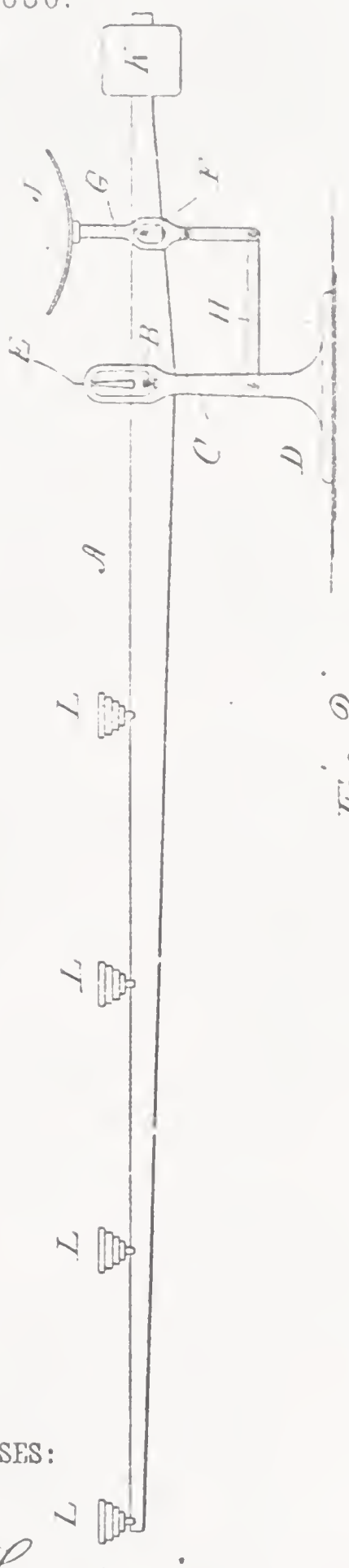
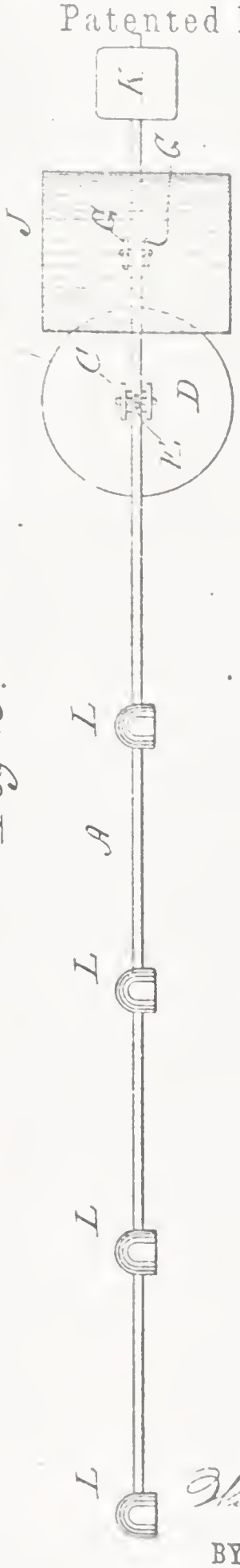


Fig 2.



WITNESSES:

F. Cook.

Chas. F. Burdett

INVENTOR:

William W. Haas

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM W. HAAS, OF FARMER CITY, ILLINOIS.

COIN COUNTER AND TESTER.

SPECIFICATION forming part of Letters Patent No. 314,330, dated March 24, 1885.

Application filed September 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. HAAS, of Farmer City, in the county of De Witt and State of Illinois, have invented a new and Improved Coin Counter, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved coin-balance for facilitating the counting of coins of all kinds.

The invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a longitudinal elevation of my improved coin-counter. Fig. 2 is a plan view of the same.

A long beam, A, provided near one end with knife edge pivots B, rests upon a standard, C, having a suitable base, D. The beam has an upwardly-projecting tongue, E, at the pivots. The short end of the beam, which is considerably shorter than the long end, is provided with two laterally-projecting pivots, F, at about half the length of the short arm from the standard C, and on the pivots an upright bar, G, is pivoted, having its lower end connected by a link, H, with the standard. On the upper end of the bar G a receptacle, J, is placed and properly secured.

A balance-weight, K, is held on the short end of the beam, so as to balance the long end.

On the long end of the beam A four cups, L, are secured, which taper toward the lower ends, and are each provided with a series of offsets. At the top the cups are large enough to receive a twenty-dollar gold piece or a silver dollar, and at the bottom they are adapted to receive a ten-cent piece. The cups are open at one side, so that the coins may be grasped by the thumb and forefinger, or may be pushed out through the open side by a finger of the operator. This improvement allows of the ready removal of the coin, as it is not necessary to first raise the coin by means of the finger-nail or a pointed instrument in order to grasp it with the forefinger and thumb, as in some prior constructions. The first cup L is such a distance from the fulcrum that it will raise five times its own weight on the receptacle J, the second that it will raise ten, the third twenty, and the fourth forty times its own weight on the receptacle J.

The operation is as follows: If a number of quarters are placed on the receptacle J, and it requires two quarters in the fourth cup from the fulcrum, one in the third cup, and one in the second cup, the number of coins on the receptacle J will be equal to $40 \times 2 + 1 \times 20 + 1 \times 10 = 110$ quarters, equal to $27.50. Dollars, eagles, double eagles, &c., are all counted in the same manner.

The unit of weight is the weight of one of the coins to be weighed.

It is not absolutely necessary that the coins should be used as weights, as weights can be substituted if they are equal in weight to the proper weight of the different kinds of coins.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A coin counter consisting, essentially, in the standard C, the beam A, pivoted thereto to form a long and a short arm, graduated open-sided cups L on the upper edge of the long arm, and weight K on the short arm, the bar G, pivoted to the short arm of the beam, between the weight and the standard, the link H, pivoted to the lower end of the bar G and to the standard, and the receptacle J on the upper end of the bar G, substantially as set forth.

2. In a coin-counter, a coin-cup, L, tapered from the top to the bottom, provided with offsets and open at one side, substantially as herein shown and described.

WILLIAM W. HAAS.

Witnesses.
GEO. COLLINS,
J. W. MORELAND.

(No Model.)

R. W. RIESS.

COMBINED PENCIL HOLDER, ERASER HOLDER, AND COIN TESTER.

No. 549,534. Patented Nov. 12, 1895.

Fig: 1

Fig: 2

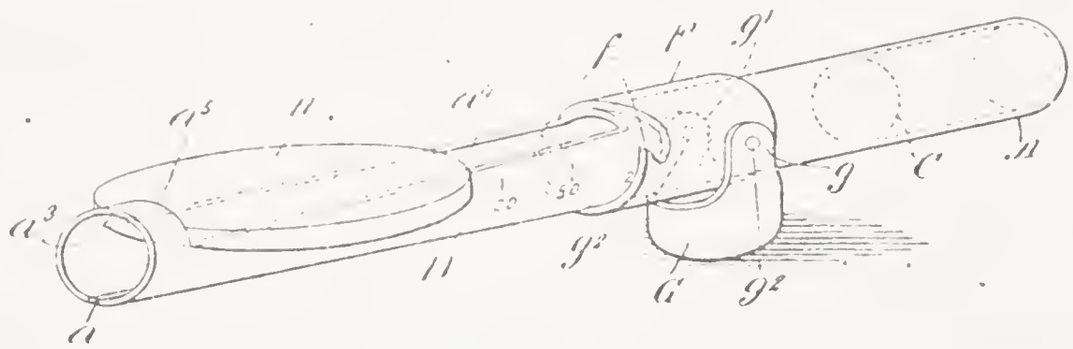


Fig: 3

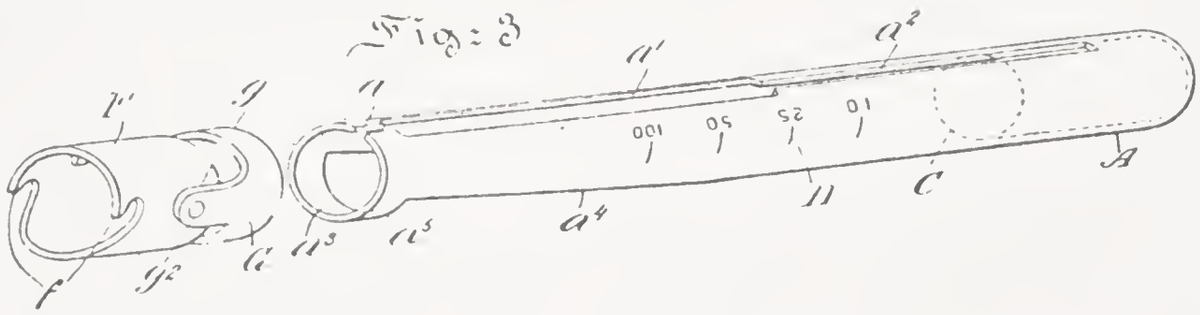
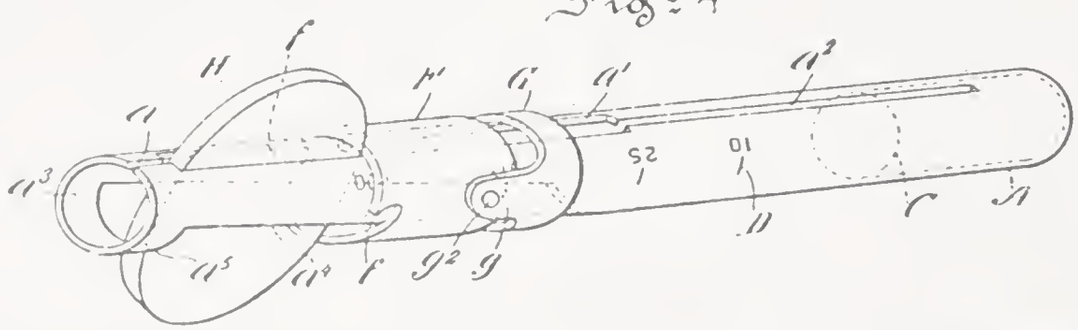


Fig: 4



Witnesses:
Richard E. Mansell
Louis Hinterhagen

Inventor.
Rudolph W. Riess,
By J. Walter Douglass
Attorney.

UNITED STATES PATENT OFFICE.

RUDOLPH WM. RIESS, OF PHILADELPHIA, PENNSYLVANIA.

COMBINED PENCIL-HOLDER, ERASER-HOLDER, AND COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 549,534, dated November 12, 1895.

Application filed April 3, 1895. Serial No. 544,238. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH WM. RIESS, a citizen of the United States, residing at Philadelphia, (Germantown,) in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Holder for a Writing Implement and an Eraser and Counterfeit-Coin Detector, of which the following is a specification.

My invention has relation to a pocket device comprising a holder for a writing implement, such as a pen or pencil, an eraser, and a counterfeit-coin detector, having adjustable means for establishing a scale for weighing, so as to determine the genuineness or spurious character of coin of different denominations, and in such connection it relates more particularly to the general construction and arrangement of the parts of the device for said purposes.

The principal object of my invention is to provide a simple, durable, and efficient pocket device for holding a writing implement and an eraser, and also adapted to be readily adjusted, so as to form a scale for readily weighing coin of different denominations as well as determining the genuineness or spurious character thereof.

My invention, stated in general terms, consists of a combined holder for a writing implement and an eraser and a coin weighing and counterfeit detector constructed, arranged, and adapted for use in substantially the manner hereinafter described and claimed.

The nature and general features of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevation of the holder with a writing implement mounted in one end, an eraser secured to the other end, and a notched sleeve with its pivotal trunnion mounted on the holder, but adapted to be so manipulated as to become a standard for the graduated scale or beam for the reception of coin of different denominations by shifting the trunnion and therewith the notched sleeve on said holder. Fig. 2 is a perspective view of the oblong slotted hollow holder for the writing implement as well as the eraser, both removed therefrom and with the slidable sleeve of the holder and its pivotal trunnion or standard in a position to establish a beam-scale, with a coin applied to the slotted portion for weighing the same, the shifting of the position of the standard and notched ended sleeve on the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, so as to accurately determine the genuineness or spurious character of the coin. Fig. 3 is a similar view of the under side of the holder, with the sleeve and its pivotal trunnion or standard removed from the holder; and Fig. 4 is a similar view of the under side of the holder, showing the guideway for the introduction of coin of different denominations for determining the genuineness of the same or the spurious character thereof, and which guideway as to the reception of coin of different denominations is controlled by said sleeve slidable on the holder, according to the graduations thereof, to permit of the coins passing therethrough.

Referring to the drawings, A is a metal or other tube or cylinder having the narrow oblong slot a on the under side merging into an oblong guideway a' and terminating in a narrow slit a^2. The guideway a' is provided for the purpose of inserting coin of different denominations, and the length of the slot is controlled by a slidable sleeve with a pointer directed to a scale on the holder, which governs the size of the slot by the movement thereof to permit of the insertion of the different coins, and thereby to readily determine whether the coin is genuine or spurious, the latter type of coin being generally more bulky or thicker than a genuine coin. Moreover, this guideway merges into the slits a and a^2, to afford the means of required expansion of the holder to permit of the insertion of a pencil or pen B into the forward end a^3 of the holder, as clearly illustrated in Fig. 1 of the drawings.

In the upper surface of the holder A is provided an enlarged slot a^4, as clearly illustrated in Figs. 1 and 2, with walls tapering to the front end and terminating in an arched projection a^5, and, as viewed transversely of the holder, forming a rest thereat for coin of

different denominations applied to the walls of the tube or cylinder for effecting the weight thereof, and thereby to determine the genuineness or spuriousness thereof, to be presently more fully explained.

The rear portion of the holder A is internally weighted by the insertion of a solid metal plug C into the tube or cylinder. The side or surface of the tube or cylinder A is provided with a graduated scale D on each side or surface to denote one dollar, fifty, twenty-five, ten cents, &c., in silver, and on the other side for gold coin of different denominations.

E is an ink or pencil eraser, of suitable shape or form, detachably applied to the weighted end of the holder A, as clearly illustrated in Fig. 1 of the drawings, and at the other or slotted and slitted end of the holder is inserted the pencil or other writing implement B, as also clearly illustrated in Fig. 1.

F is a sleeve fitting the exterior surface of the holder A and adapted to be slid thereon. This sleeve on each side is provided with a notch having a point *f*, and serving as a pointer for the graduated scale of the holder A. This sleeve is provided with a trunnion G, the arms *g* and *g'* of which, by means of rivets or pins g^2, are connected with said sleeve F and constitute the sliding standard G of the coin-weighing device. In an inoperative position the standard and its sleeve occupy the position illustrated in Fig. 1, while in operative position they respectively assume the position shown in Fig. 2, and the sleeve is adapted to be slid along the holder about the scale with the pointer *f* directed thereto and so that the holder may receive at the forward tapering portion thereof the coin H, as illustrated in Fig. 2, overbalancing the rear weighted end of the holder by the coin depressing the same, so as to assume the position illustrated in Fig. 2, at an angle to a horizontal plane to denote the genuineness thereof; but if a counterfeit, the weighing device thus established by the holder with the sleeve and its pivotal trunnion properly positioned will not overbalance the weighted end of the holder, whereby at once the spuriousness of the coin can be readily detected. By shifting the sleeve on the holder according to the scale with the pointer *f* of the sleeve in each instance directly opposite to the numeral of the graduated scale of the holder a coin corresponding to the numeral indicated on the scale can be quickly and reliably detected as to whether genuine or not.

It may be here remarked that spurious coins are usually of greater thickness than the genuine coin, in order to secure required weight, and these can be detected by introducing the same through the guideway *a'* of the slotted holder after having adjusted the sleeve of the holder according to the scale thereon to permit of a passage of the same through the said guideway.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A combined holder for a writing implement and eraser and weighing device for coins, consisting of a tube or cylinder open at one end for the reception of the writing implement, weighted at the other end and having an eraser applied thereon and a sleeve with a pivotal standard for establishing a weighing device for coin of different denominations, substantially as and for the purposes set forth.

2. A holder for a writing implement and weighing device, comprising a graduated scale tube or cylinder provided with an oblong slot for inserting coin therethrough and with a tapering surface forming a rest for the coin and a slidable sleeve on said tube or cylinder and having a pivotal trunnion forming in operative position a vertical standard for the weighing device, substantially as and for the purposes set forth.

3. A holder for a writing implement and weighing device, comprising a slotted counterweighted and graduated scale tube or cylinder with a guide-way for inserting therethrough coin, oblong slits merging into said guide-way, a removable sleeve mounted on said tube or cylinder and provided with a pivotal trunnion forming in operative position a standard for the weighing device, substantially as and for the purposes set forth.

4. A combined holder for a writing implement and weighing device, comprising a graduated or scaled cylinder open at one end and weighted at the other end and having an intermediate guide-way and a coin rest, a sleeve provided with a pointer and a movable trunnion connected with said cylinder and slidable thereon, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

RUDOLPH WM. RIESS.

Witnesses:
CHARLES H. WEISS,
WM. H. EMHARDT, Jr.

UNITED STATES PATENT OFFICE.

RUDOLPH WM. RIESS, OF PHILADELPHIA, PENNSYLVANIA.

COMBINED PENCIL-HOLDER, ERASER-HOLDER, AND COMPASS.

SPECIFICATION forming part of Letters Patent No. 540,994, dated November 12, 1895.

Application filed April 1, 1895. Serial No. 544,141. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH WM. RIESS, a citizen of the United States, residing at Philadelphia, (Germantown,) in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in or a Combined Holder for a Writing Instrument and an Eraser and Combination Copy Director, of which the following is a specification.

My invention has reference to a pocket device comprising a holder for a writing implement, such as a pen or pencil or an eraser, and a counterfeit coin director having adjustable means for extending a scale for weighing or for deciding the genuineness or approximate character of coin of different denominations, and in some connection it relates more particularly to the general construction and arrangement of the parts of the device for said purposes.

The principal object of my invention is to provide a simple, compact, and portable pocket device for holding a writing implement or eraser, and also adapted to be readily adjusted, so as to enable one to readily ascertain coin of different denominations as well as determine the genuineness of certain classes thereof.

My invention, again in general terms, consists of a combined holder for a writing implement and an eraser, and a coin weighing and counterfeit detecting instrument, connected, and adapted for use in connection, the parts being constructed, combined, and arranged substantially as hereinafter described and claimed.

The various novel features of my invention will be more fully understood from the following description taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of the holder with a writing instrument inserted in one end thereof and the other end closed by a cap, and an eraser secured to the side thereof, and a portion broken away to show construction. Fig. 2 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 3 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 4 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 5 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 6 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 7 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 8 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 9 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 10 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 11 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 12 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 13 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 14 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 15 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 16 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 17 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 18 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 19 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 20 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 21 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 22 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 23 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 24 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 25 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 26 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 27 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 28 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 29 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 30 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 31 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 32 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 33 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 34 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 35 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 36 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 37 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 38 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 39 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 40 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 41 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 42 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 43 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 44 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 45 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 46 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 47 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 48 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 49 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 50 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 51 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 52 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 53 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 54 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 55 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 56 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 57 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 58 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 59 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 60 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 61 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 62 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 63 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 64 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 65 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 66 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 67 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 68 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 69 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 70 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 71 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 72 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 73 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 74 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 75 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 76 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 77 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 78 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 79 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 80 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 81 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 82 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 83 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 84 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 85 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 86 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 87 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 88 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 89 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 90 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 91 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 92 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 93 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 94 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 95 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 96 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 97 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 98 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 99 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 100 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 101 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 102 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 103 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 104 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 105 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 106 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 107 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 108 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 109 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 110 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 111 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 112 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 113 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 114 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 115 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 116 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 117 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 118 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 119 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 120 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 121 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 122 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 123 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 124 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 125 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 126 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 127 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 128 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 129 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 130 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 131 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 132 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 133 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 134 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 135 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 136 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 137 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 138 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 139 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 140 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 141 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 142 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 143 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 144 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 145 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 146 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 147 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 148 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 149 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 150 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 151 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 152 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 153 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 154 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 155 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 156 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 157 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or standard in a position to coöperate with a coin contained in the recessed portion for weighing the same, the adjustment for the position of the standard and pointer being shown by the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, and Fig. 158 is a similar view of the opposite side of the holder with the sleeve and its provided extension or standard removed from the holder and Fig. 159 is a longitudinal view of the instrument, the holder being shown in section for the purpose of more clearly illustrating the construction of the sliding sleeve and its provided extension or

No. 39,890.

PATENTED SEPT. 15, 1863.

D. CUMMING, Jr.

COIN AND LETTER SCALE.

Fig 3.

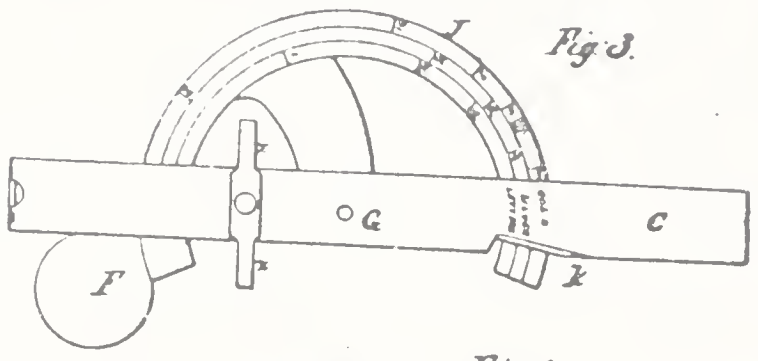


Fig 2.

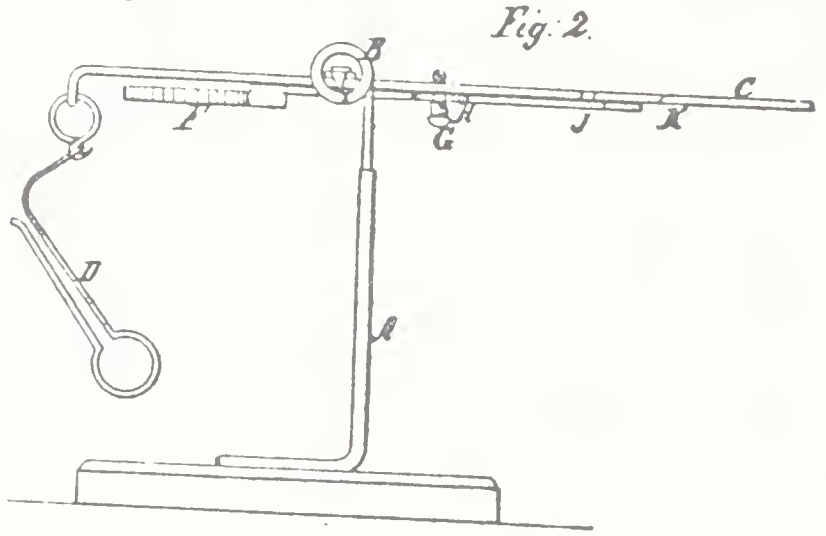
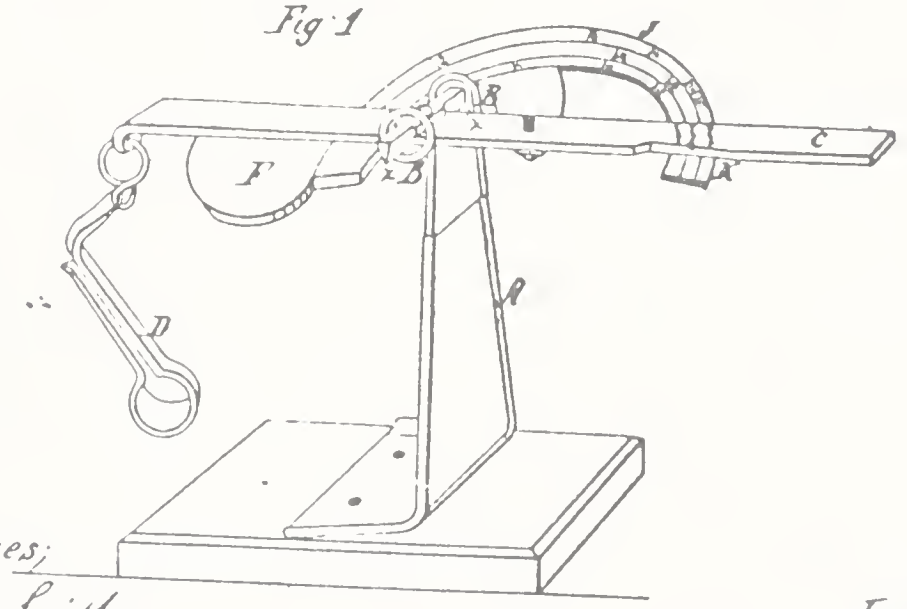


Fig 1



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UNITED STATES PATENT

DAVID CUMMING, JR., OF NEW YORK, N

IMPROVEMENT IN COIN AND LETTER SC

Specification forming part of Letters Patent No. 39,890, dated September
February 2, 1863.

To all whom it may concern:

Be it known that I, DAVID CUMMING, Jr., of New York, county and State of New York, have invented a new and useful Improvement in Coin and Letter Scales; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a longitudinal elevation, and Fig. 3 a horizontal plan of the top.

The same letters refer to corresponding parts in the different figures.

A is the standard, with the bearings B B, on which the knife-edges *x x* rest. The knife-edges are firmly secured to the beam C, one end of which has the spring holder D swinging freely from it on a knife edge. F is a weight, which is attached to the beam by the pivot G. The weight moves freely on the pivot, and is held where required by the spiral spring H on the pivot. Attached to the weight is the curved plate J, containing the marks and figures of the deno ent coins, and also the dicating an ounce and weighing letters.

Manner of working: is placed in the spring moved around on the the denomination of plate is directly und beam. If the coin is o beam will be incline which the coin hangs in the same manner.

The machine has be and can be manufactu

What I claim as ne by Letters Patent, is—

The pivoted weight operated substantiall the purpose set forth.

Witnesses:
STEPH. WM. S
J. S. TUTTLE.

T. J. TOWSEY.

DEVICE FOR DETECTING COUNTERFEIT COIN.

No. 187,938. Patented Feb. 27, 1877.

Fig: 1.

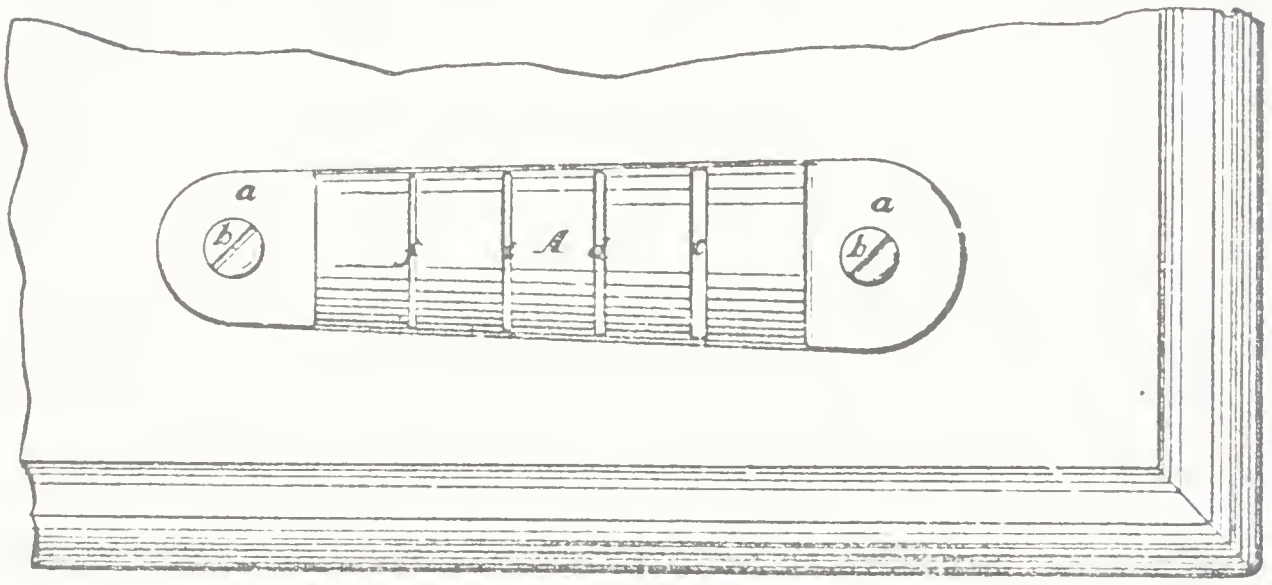
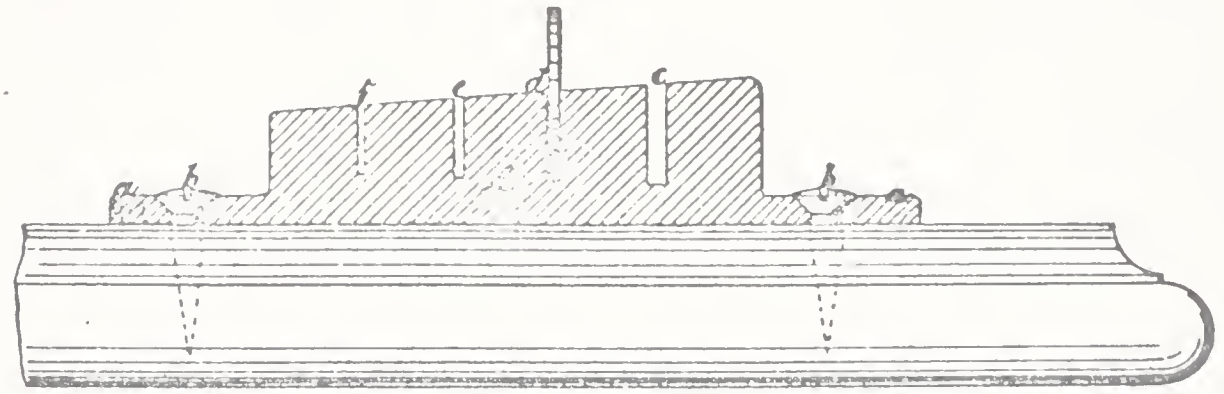


Fig: 2.



Witnesses:

Otto Stupeland

Robt. E. Miller.

Inventor.

Thomas J Towsey

by

Van Santvoord & Lauff

his attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE

THOMAS J. TOWSEY, OF NEW YORK, N. Y.

IMPROVEMENT IN DEVICES FOR DETECTING COUNTERFEIT COIN.

Specification forming part of Letters Patent No. 187,038, dated February 27, 1877; application filed December 13, 1876.

To all whom it may concern:

Be it known that I, THOMAS J. TOWSEY, of the city, county, and State of New York, have invented a new and Improved Device for Testing the Breaking Resistance of Coins, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a plan or top view. Fig. 2 is a longitudinal vertical section.

Similar letters indicate corresponding parts.

My invention has for its object to test the breaking resistance of coins, and to detect the spurious nature of such coins which are made of base metals, but equal in weight and in other qualities to genuine coins.

My invention consists of a receiver, composed of a body having at each end a flange perforated for the passage of screws, to fasten it to a counter or table, and constructed with a series of vertical slots of different width, into either of which a coin of corresponding size to the slot can be placed, for testing the same, as hereinafter more fully described.

In the drawing, the letter A designates a receiver, which is made of cast-iron or any other suitable material, and provided with flanges *a* perforated with holes for the reception of screws *b*, by means of which the same can be readily and firmly secured on a table or counter. In the receiver A are a series of recesses, *c d e f*, of gradually diminishing width and depth, the first recess being intended for testing silver dollars, the second for silver half-dollars, the next for silver quarters, &c. The recess *c*, therefore, is made a little wider than the thickness of a silver dollar, and its depth is about equal to the radius of such a dollar piece, while the width of the recess *d* is a little larger than the thickness of a fifty-cent silver piece, and its depth is about equal to the radius of such a piece, and so on. In the example shown in the drawing all the recesses *c d e f* are in one and the same receiver; but, if desired, a separate casting may be provided for each recess.

The coin to be tested is dropped into the corresponding recess, as shown in Fig. 2, and by pressing against its projecting edge with the thumb, its breaking resistance is ascertained. By these means the spurious nature of such coins can be ascertained which are made of base metal, and which have the same weight and ring as genuine coin, but not the same breaking resistance.

What I claim as new, and desire to secure by Letters Patent, is—

The receiver A, formed at each end with a perforated flange, *a*, for the passage of screws, to secure it to a counter or table, and provided in its body with a series of vertical recesses, *c d e f*, of different width and depth substantially as and for the purpose herein described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 6th day of November, 1876.

THOS. J. TOWSEY. [L. S.]

Witnesses:
ROBT. E. MILLER,
E. F. KASTENHUBER.

G. M. HOPKINS.

COIN TESTER.

No. 188,637. Patented March 20, 1877.

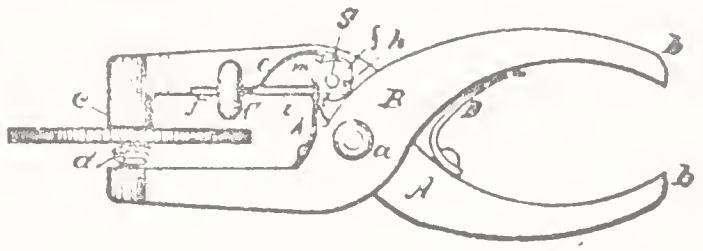


Fig 1.

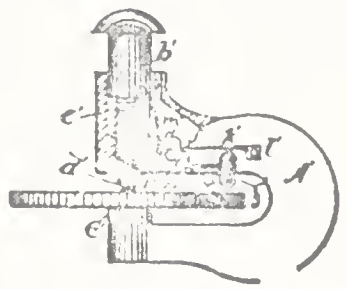


Fig 2.

WITNESSES:

Geo. M. Hopkins.

E. L. S. Topliff

INVENTOR:

Geo. M. Hopkins.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE M. HOPKINS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND CYRUS L. TOPLIFF, OF SAME PLACE.

IMPROVEMENT IN COIN-TESTERS.

Specification forming part of Letters Patent No. **188,637**, dated March 20, 1877; application filed February 12, 1877.

To all whom it may concern;

Be it known that I, GEORGE M. HOPKINS, of Brooklyn, in the county of Kings and State of New York, have invented an Improved Coin-Tester, of which the following is a specification:

My invention consists in the combination of a clamp for holding coin and a spring-actuated hammer for striking the same, the object being to provide a simple, compact, and yet effective instrument for testing coins by ringing them by means of a hammer while they are held by a clamp.

In the drawing, Figure 1 is a side elevation of an instrument employing levers to clamp the coin. Fig. 2 is a side elevation of an instrument in which the coin is clamped by a follower.

A B are crossed levers, pivoted together at *a*, having the arms *b* formed into handles, which are thrown apart by the spring D. Upon the end of the lever A opposite its handle a boss, *c*, is formed, and to the end of the lever B opposite its handle a spiral spring, *d*, is attached. C is a hammer fixed to a spring-arm, *e*, that is attached to a disk, *f*, which is pivoted at *g* to the lever A. A pin, *h*, projects from the back of the disk *f*, and is pressed by a spring, *i*, that is secured in a recess in the lever A by a screw, *j*. A spring, *k*, that projects from the lever B, engages a notch cut in the disk *f* when the handles are forced together, and raises the hammer. The shoulder *l* of the disk *f* throws the spring *k* out of the notch in the disk when the hammer is raised, and the spring *i*, acting on the pin *h*, causes the hammer to descend. The spring-arm of the hammer strikes pin *m*, that projects from the lever A, as the hammer descends, causing it to rebound after striking the coin.

The coin to be tested is clamped between the boss *c* of the lever A and the spring *d*, attached to the lever B, by closing the handles together.

This operation not only clamps the coin, but also partly raises the hammer. The pressure on the handles is increased until the hammer is raised through its full stroke and tripped.

The sound emitted by the coin as it is struck by the hammer indicates its quality.

In Fig. 2 an instrument is shown differing in form from that above described, but acting on the same general principle.

A′ is a yoke or U-shaped frame, which is bored to receive the follower *b′*, and is provided with a boss, *c′*, upon which the coin rests. To the inner end of the follower *b′* a short spiral spring, *d′*, is attached, between which and the boss *c′* the coin is clamped. A spring, *e′*, is placed in the larger part of the bore of the frame A′, and presses the shoulder of the follower *b′*. *f′* is a hammer fixed to a spring-arm, *g′*, that is attached to a disk, *h′*, which is pivoted at *i′* to the frame A′. A notch, *j′*, is formed in the disk *h′*, which receives a spring, *k′*, that is attached at *l′* to the frame A′. A spring, *m′*, is attached to the follower *b′*, and engages a notch, *n′*, in the disk *h′*. As the follower is pressed downward the disk is turned, and the hammer raised until the shoulder *o′* trips the spring *m′*, permitting the hammer to fall and strike the coin, as in the other case.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a clamp for holding coin and a spring-actuated hammer for striking the same, substantially as herein shown and described.

2. The combination of the levers A B, spring *d*, hammer C, and springs *k i*, substantially as herein shown and described.

3. The combination of the U-shaped frame A′, spring-follower *b′*, hammer *f′*, and springs *k′ m′*, substantially as shown and described.

GEORGE M. HOPKINS.

Witnesses:

H. M. HOPKINS,

C. L. TOPLIFF.

CHEMISTRY, ELECTRICAL Cross Reference
AND WAVE ENERGY.

5

A. J. BAKER & J. W. SIMONTON.

Device for Detecting Counterfeit Coin.

No. 202,691. Patented April 23, 1878.

Fig. 1.

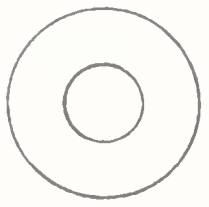


Fig. 2.

Witnesses:
John O'Donnoghue
E. H. Bradford

Inventors:
Aaron J. Baker
John W. Simonton
By H. J. Ennis
Attorney

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AARON J. BAKER, OF EDINBURG, AND JOHN W. SIMONTON, OF TAYLORSVILLE, INDIANA.

IMPROVEMENT IN DEVICES FOR DETECTING COUNTERFEIT COIN.

Specification forming part of Letters Patent No. **202,691**, dated April 23, 1878; application filed January 7, 1878.

To all whom it may concern:

Be it known that we, AARON J. BAKER, of Edinburg, in the county of Johnson, and JOHN W. SIMONTON, of Taylorsville, in the county of Bartholomew, all in the State of Indiana, have invented certain new and useful Improvements in Detecting Counterfeit or Spurious Coin and Metals; and we do hereby declare that the following is a full, clear, and exact description of our invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan, and Fig. 2 a sectional view, of the invention.

This invention relates to improvements in devices for detecting spurious gold and silver coins, and in the improved construction of the same, and manner of applying the test, hereinafter more fully described, and particularly pointed out in the claim.

The invention consists of a circular or other suitably-shaped piece of zinc, provided with an opening in the center, the manner of operating the same being to place the test upon the coin to be tested and applying the tongue to the coin through the opening in the center of the piece of zinc, and if the coin is pure, or nearly so, a very perceptible electric shock, accompanied by a decided metallic taste, will be experienced, which shock and taste diminish in intensity in proportion as the coin is alloyed with the baser metals, it being a well-known fact that to produce galvanic action it is only necessary to form what is called a "galvanic circle"—that is, a certain order of substances capable of exciting electricity.

The electrical effects of a simple galvanic circle are in general too feeble to be perceived, except by very delicate tests. However, the tongue and other sensitive parts of the body, being very easily affected, afford a simple and convenient mode of putting the process in operation.

The most convenient shape for a coin-tester of this description is a disk having a central opening, the circular form having no projections to wear holes in the purse or pocket, and the central opening presenting the largest amount of surface in the most convenient manner for the purpose specified.

In this test, although the quantity of electricity set in motion is very small, it is quite sufficient to produce very considerable effects; hence the great desirability and convenience of the above manner of testing coins, involving no complicated balances or delicate instruments of any kind, it being easily operated by a child, or even those people deprived of sight, who could not use any of the tests ordinarily applied in such cases.

Having thus described our invention and the process involved of testing coins, what we claim as new and useful, and desire to secure by Letters Patent, is—

A coin-tester consisting of a disk of zinc having an opening in the center, substantially as and for the purpose specified.

In testimony that we claim the foregoing as our own we hereby affix our signatures in presence of two witnesses.

AARON J. BAKER.
JOHN W. SIMONTON.

Witnesses:
ROBERT W. MEDKIRK,
PETER A. CANARY.

E. LUEDERS.
Coin-Tester.

No. 205,492. Patented July 2, 1878.

Fig: 1

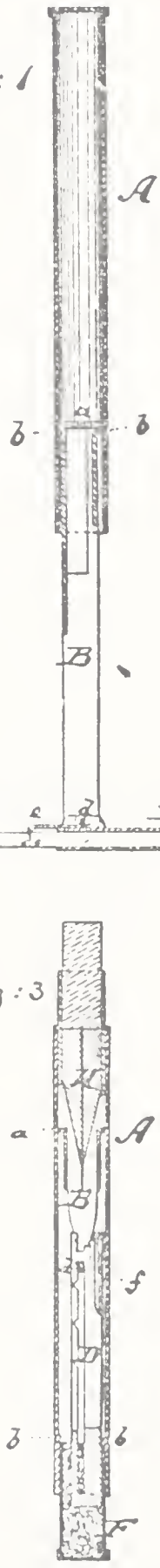


Fig: 2

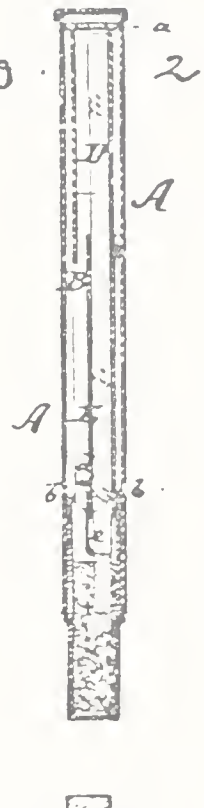


Fig: 3

Fig: 4

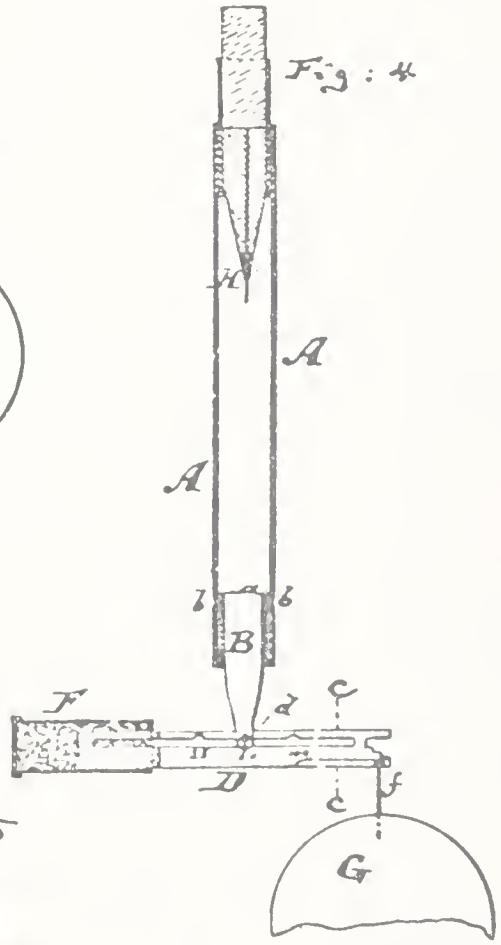


Fig: 5

Witnesses:
D. W. Briesen
T. B. Hooker

Inventor:
Emil Lueders
by his attorney
A. W. Briesen

PETERS PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EMIL LUEDERS, OF WEST HOBOKEN, NEW JERSEY.

IMPROVEMENT IN COIN-TESTERS.

Specification forming part of Letters Patent No. **205,492**, dated July 2, 1878; application filed April 19, 1878.

To all whom it may concern:

Be it known that I, EMIL LUEDERS, of West Hoboken, in the county of Hudson and State of New Jersey, have invented an Improved Specie-Scale, of which the following is a specification:

Figure 1 is a vertical central section of my improved specie-scale, showing it extended for use. Fig. 2 is a vertical central section of the same, showing it contracted and folded together. Fig. 3 is a vertical central section of a modification thereof, showing the same folded together. Fig. 4 is a vertical central section of a modification thereof, showing it extended in condition for use. Fig. 5 is a detail cross-section on the line *c c*, Fig. 4, showing the clasp for holding the coin.

Similar letters of reference indicate corresponding parts in all the figures.

This invention has for its object to produce in the most convenient form a pocket-scale for weighing coins, and for distinguishing genuine from counterfeited coins.

The entire instrument can be folded or pushed into a shell, the same as a pocket-pencil, and can be carried in the pocket without inconvenience, and is yet always ready for use when desired.

The invention consists principally in combining, with the inclosing case or shell, having inwardly-projecting stops or pins, a slide having a head, and a scale-beam pivoted to said slide, so that it can be swung at right angles thereto.

The invention also consists in providing said beam at one end with a weight, and at the other end with a clasp for holding the coin to be weighed, and in other details of improvement, hereinafter more fully specified.

I will first describe the instrument as shown in Figs. 1 and 2. In these figures the letter A represents a shell made of sheet metal, hard rubber, or other suitable material, of cylindrical or other proper form, within which shell is contained a slide or piston, B, which can be pushed entirely into the shell, as in Fig. 2, or partly withdrawn therefrom, as in Fig. 1, its head *a* being, in the last-mentioned position, supported on inwardly projecting pins or stops *b* that are formed within the shell A, as shown.

The lower end of the slide B is forked, and adapted to receive the pivot *d* of the scale-beam D. In the construction shown in Fig. 1, the scale-beam D proper slides within a sleeve, E, which sleeve is, by the pin *d*, pivoted to the slide B. The sleeve E carries, in this instance, a projecting spring-catch, *e*, which engages into notches formed on the edge of the beam D, to regulate the several positions of the latter. One end of the beam D carries a weight, F. The opposite end of the sleeve E carries a wire clasp, *f*, of the kind more clearly shown in Fig. 5, for holding the coin G to be weighed.

The beam D in Fig. 1 is shown to be provided with four notches. That nearest the weight F is for defining its position in weighing quarter-dollars; that next thereto, and in which the spring *e* is shown to engage in Fig. 1, defines the position of the scale-beam in weighing half-dollars. The third notch is intended to weigh the so called silver "legal-tender" dollars; and that next thereto, the trade-dollars; but other notches may be supplied for weighing other kinds of coin, even gold coin, if desired.

When the instrument is not required for use, the sleeve E and beam D are folded into the forked slide B and pushed into the shell A, as in Fig. 2, in which case the cylindrical weight F will close the formerly open end of the shell, as also shown in Fig. 2.

The modification shown in Figs. 3 and 4 differs from the apparatus shown in Figs. 1 and 2 substantially only in that the sleeve E is dispensed with, the beam D being slotted instead, and the slot supplied with a series of notches, as clearly shown in Fig. 4, so that the beam may be directly adjusted on the pivot *d* in lieu of adjusting it within the sleeve E.

In this case the clasp *f* is directly attached to the non-weighted end of the beam D, as shown in Fig. 4. The construction shown in Figs. 3 and 4 is less expensive than the other, and more convenient in admitting of a shorter slide, B; but in other respects the operation is exactly the same.

The shell A may, if desired, be used for holding a pencil, H, as in Figs. 3 and 4, or a pen or other convenient device.

I do not claim to have invented a pocket-scale consisting of a shell, slide, and weighted

scale-beam pivoted to said slide, and carrying a clasp for suspending the coin, all arranged so that the scale-beam is at right angles to the slide when the scale is used; but

I do claim—

1. The shell A, made with inwardly-projecting stops or pins *b*, and combined with the slide B, having head *a*, and with the scale-beam D, pivoted to said slide so that it can be swung at right angles thereto outside of the shell, substantially as herein shown and described.

2. The combination of the pivoted sleeve E with the notched beam D, carrying weight F, and with the spring-catch *e*, for operation substantially as specified.

EMIL LUEDERS.

Witnesses:
T. B. MOSHER,
J. TURK.

P. DOHERTY.

COIN-DETECTOR.

No. 192,241. Patented June 19, 1877.

Fig. 1.

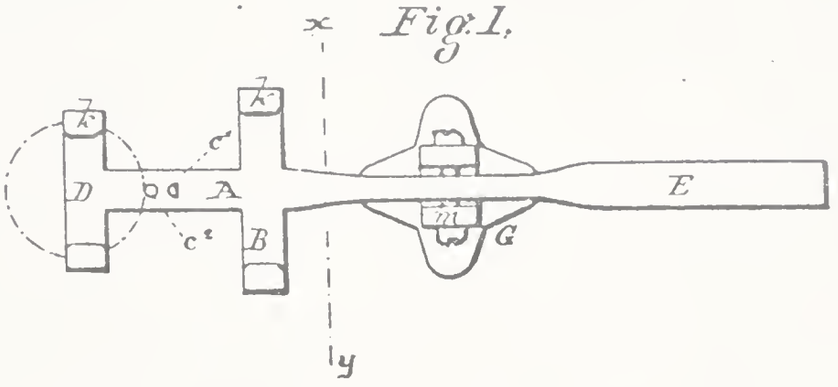


Fig. 2.

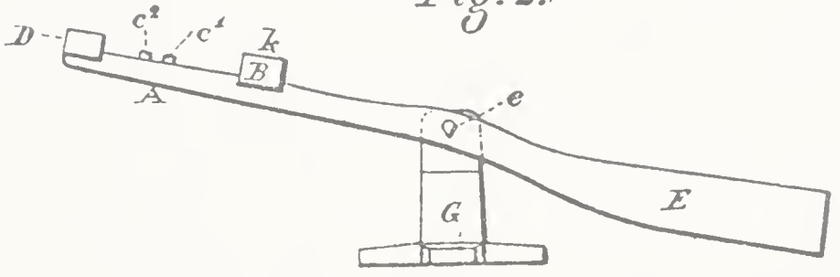


Fig. 4

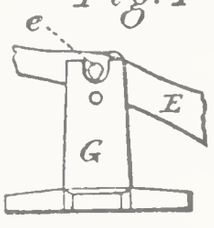
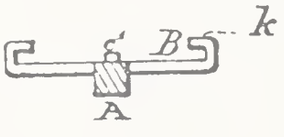


Fig. 3.



Witnesses.

John F. Grant

D. Louis Flowers

Inventor.

Patrick Doherty

per Edw. Brown

attorney.

UNITED STATES PATENT OFFICE

PATRICK DOHERTY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COIN-DETECTERS.

Specification forming part of Letters Patent No. **192,211**, dated June 19, 1877; application filed April 2, 1877.

To all whom it may concern:

Be it known that I, PATRICK DOHERTY, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Counterfeit-Coin Detecter, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a plan of the instrument. Fig. 2 is an elevation, with the cap of the stand removed. Fig. 3 is a cross-section on line *x y* showing the gage. Fig. 4 shows the side of the stand, with the cap *m* removed.

My invention consists in a balance-lever, with gages and adjusting stop attached, for weighing and measuring silver halves and quarter dollars, or gold coin, and detecting the counterfeits.

A represents the gage-arm, and E the weighted or resisting arm made in the form of an elongated weight, with easy curves, to facilitate the forming and polishing of the arm. G is the stand. *m* is the cap covering the pivot *e*.

For the detection of counterfeit half-dollars the gage-arm has secured to it a cross-piece, B, turned up and bent over, as shown in Fig. 3. The vertical portion of this cross-piece gages the diameter of the coin and the turned-over flange *k* gages its thickness. An adjusting stop, c^1, is inserted in the gage-arm at such a distance from the cross-piece, B, as to permit more than half of the coin to be inserted in the gage B. The form of this stop is of such convenience that it provides for an easy mode of accurately adjusting the balance of the instrument. This is done by filing off a small portion of the inside of the stop until the position of the coin is such as to turn the balance.

To detect the counterfeit quarters there is a similar gage, D, at the end of the gage-arm, and a similar stop, c^2. The quarter-dollars enter the gage from the extremity of the arm, and the halves enter their particular gage from the pivot side. The pivot *e* is made of steel, and is knife edged, as in scale-beams, and is supported by the stand G.

I do not confine myself to the number of gages herein shown, or to the precise manner of forming the lip *k*, as a large-headed screw might readily be used. Gold coin may also be tested in a similar manner.

As the specific gravity of silver is greater than that of any baser metal, a counterfeit must be either larger in size, if of the same weight, or lighter, if of the proper size, than the genuine coin.

When the coin passes through the gage to the stop c^1 more than half the coin is held by the gage which tests the diameter as well as the thickness of the coin, and the lever tests the weight.

It will thus be seen that, with one operation or manipulation of the coin, I can test it in diameter, thickness, and weight, and thus detect a counterfeit.

I claim—

1. In a counterfeit-coin detecter, the combination of the resisting-arm E, the arm A, the gage B for testing the diameter and thickness of the coin, and the adjusting-stop c^1, as herein described.

2. The combination of the arm E, the arm A, a gage for detecting the diameter of the coin, and stop c^1, for adjusting the instrument, as herein described.

3. The combination of the arms E A, the gages B and D, and the adjusting-stops c^1 c^2, as herein described.

PATRICK DOHERTY.

Witnesses:
EDWD. BROWN,
JOHN F. GRANT.

DESIGN.

J. T. McNALLY & W. H. HARRISON.

SCALES.

No. 12,795. Patented Feb. 28, 1882.

Fig. 1.

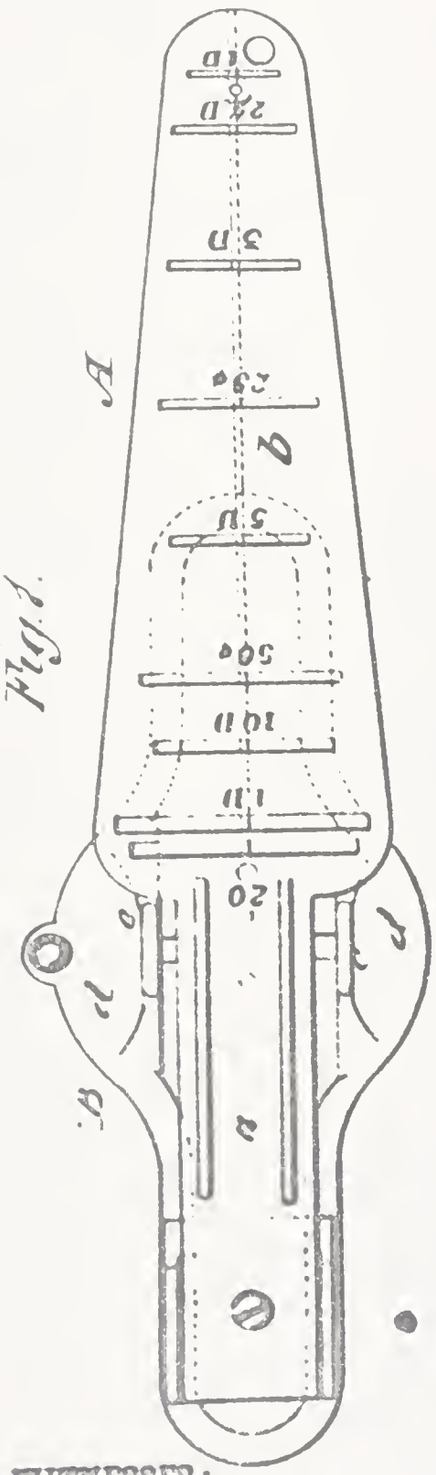
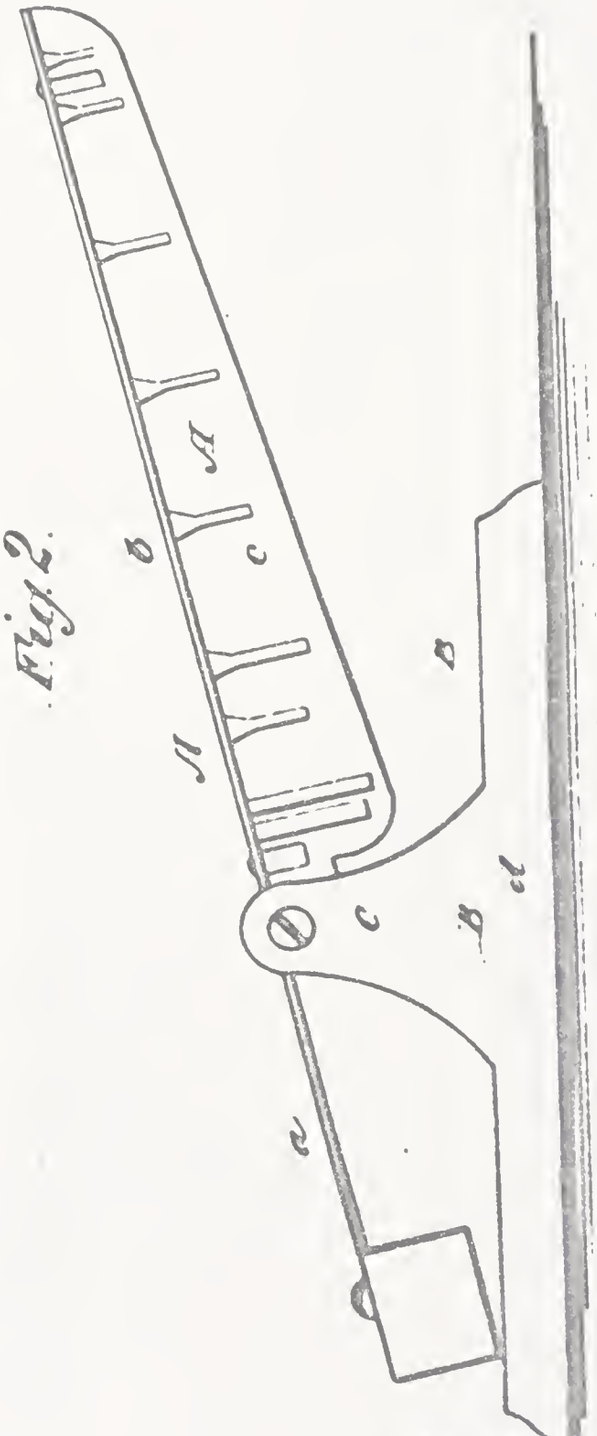


Fig. 2.



WITNESSES:

INVENTOR:

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES T. McNALLY AND WALTER H. HARRISON, OF NEW YORK, N. Y.

DESIGN FOR SCALES.

SPECIFICATION forming part of Design No. 12,795, dated February 28, 1882.

Application filed January 6, 1882. Term of patent 7 years.

To all whom it may concern:

Be it known that we, JAMES T. McNALLY and WALTER H. HARRISON, of the city, county, and State of New York, have invented a new and Improved Design for Scales, of which the following is a full, clear, and exact description.

Reference is to be had to the following drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

In the drawings, Figure 1 is a plan view, and Fig. 2 a side view, of our newly designed scale.

A represents the beam, and B its supporting base. *a* is a portion having parallel sides, and *b* a portion having tapered sides, rounded end, and rounded at the vertices of the angles. *c* is a depending rib or flange on the under side of the beam. The whole presents an ornamental appearance to the eye. The base B is oblong in the direction of the length of beam A, and is widened at its mid length by rounded side extensions, *d d*, at which place it is also formed with vertical flanges *e e* for support of the beam.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The design for scales herein shown and described, which consists in the oblong base B, having side extensions, *d*, and flanges *c*.

JAS. T. McNALLY.
W. H. HARRISON.

Witnesses:
GEO. D. WALKER,
C. SEDGWICK.

(No Model.)

E. KNIGHT.

LETTER SCALE AND COIN TESTER.

No. 388,138. Patented Aug. 21, 1888.

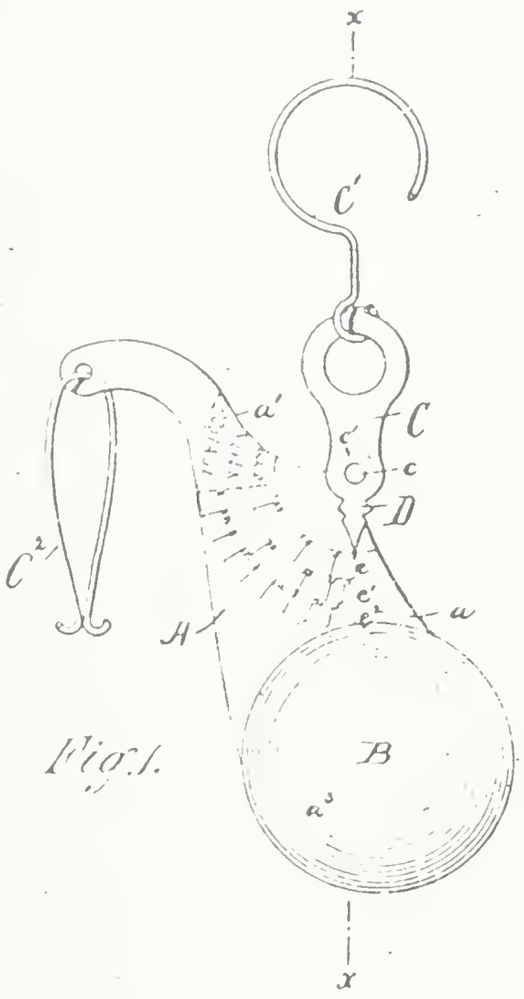


Fig. 1.

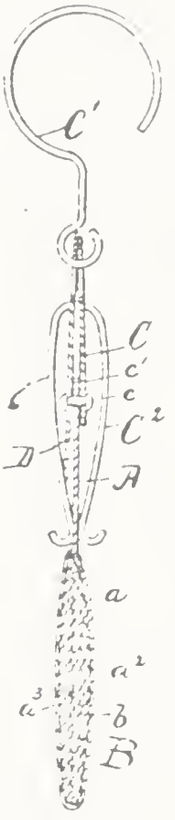


Fig. 3.

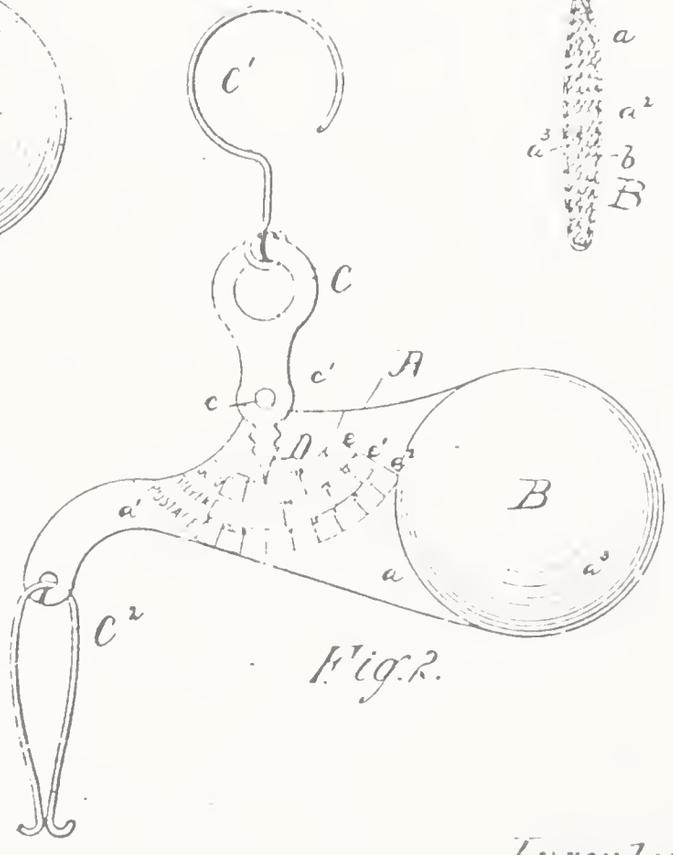


Fig. 2.

Witnesses.
C. M. Benjamin.
A. J. Fales.

Inventor.
Edgar Knight.
By Arthur S. Fitch.
Atty

UNITED STATES PATENT OFFICE.

EDGAR KNIGHT, OF SAYBROOK, CONNECTICUT.

LETTER-SCALE AND COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 388,133, dated August 21, 1888.

Application filed September 9, 1887. Serial No. 248,944. (No model.)

To all whom it may concern:

Be it known that I, EDGAR KNIGHT, of Saybrook, county of Middlesex, State of Connecticut, a citizen of the United States, have invented an Improved Letter-Scales and Coin-Tester, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a combined letter-scale and coin-tester, and it consists in the combination of devices hereinafter described, and as more at length recited in the claim.

Figure 1 is a front elevation of the instrument containing my invention, and showing it at rest. Fig. 2 is a similar view of the same, showing it in the operation of weighing; and Fig. 3 is a longitudinal section on the line *x x*, Fig. 1.

A is the beam, consisting of a metal plate, which is pivoted to oscillate in a clip, C, by means of a pin, *e*, passed loosely through the beam at *e'* and through the clip. The upper end of the clip is perforated, as shown, so that the instrument may be suspended by the clip. The clip is desirably furnished with a hook, C', which is loosely linked into the perforated end of the clip as furnishing a convenient means for suspending the clip. The clip is preferably composed of two limbs, as shown, with the beam seated loosely between them. The portion *a* of the plate-beam A contiguous to the fulcrum-pin *e* is wide-faced or broad in extent, and upon this wide-faced portion *a* I form or place indicator-scales *a' a² a³*, one or more, each in the shape of or describing an arc of a circle of which the fulcrum-pin *e* is the center. The clip C is extended past the fulcrum-point *e*, and its extended end lies over the wide-faced scale-portion *a* of the plate-beam, and constitutes a pointer, D, which ranges over said portion *a* of the beam when the beam oscillates in the clip.

One end of the plate-beam is weighted, as at B. This may be effected by forming a concavity, *a³*, in the plate, placing therein a corresponding weight, *b*, and then covering the weight with a cap, *a³*. A beam of desirable appearance is thus produced. The opposite arm *a'* of the beam is provided with a holder, C², in the form, preferably, of a spring-wire clip linked loosely to the end of said arm. The arm *a'* is desirably narrowed, as shown, and has a downward curve at its free end.

The indicator-scales *a' a² a³*, each or all, are so arranged on the portion *a* of the beam relatively to the pointer D that when the beam gravitates to rest with the suspending-clip C the said pointer will indicate zero on the scale or scales. The scales may then be marked or graduated to indicate ounces and fractions thereof for use in weighing postal matter, while the scales *a² a³* may be graduated to indicate the correct weight of gold and silver coins, respectively, as shown in the drawings.

Heretofore in constructing postal and analogous scales of this description—namely, with a suspended beam, a suspending-clip, and a weighted arm on said beam, the indicator-scale or scales have been placed upon the face of the extreme end of the weighted arm, and an independent pointer has been loosely pivoted upon the face of said arm and allowed to gravitate over said scale or scales for the purpose of indicating the weight of articles suspended on the opposite arm; but in operating scales thus constructed the pointer is exceedingly liable to get out of proper adjustment relatively to the indicator-scales on the weighted arm, and therefore to indicate inaccurately on the scales. By means of an apparatus constructed as I have herein described, the pointer being a part of the suspending-clip C and ranging over the scale-portion *a* of the beam all liability of inaccuracy is obviated.

I do not claim, broadly, herein the combination, with a pointer carried by the suspending-clip, of a graduated beam over which said pointer ranges, as I am aware that such devices are not new. I intend to limit my claim hereunder to the combination with the peculiar scale-beam shown, consisting of a plate fulcrumed at its edge, between its ends, in a suspending-clip, and having one end weighted, of an indicator-scale or scales in the form of an arc of a circle of which the fulcrum is the center, on said plate-beam, and a pointer constituted by an extension of the suspending-clip and ranging over the arc-scales on said beam.

What I claim as my invention, and desire to secure by Letters Patent, is—

In weighing-scales, the combination of the

plate A, constituting the scale beam, and provided with a fulcrum at or near its center, and adapted to be suspended at or near its center between its ends to the suspending clip C, and provided with the weight B and the clip C at opposite ends of said beam, respectively, and having a graduated scale, one or more, on the face of the arc of a circle of which the fulcrum is the center on its side face, as described, with a pointer, D, constituted by an extension of the suspending clip over the side face of the beam, and adapted to range over the graduated scale, as and for the purpose specified.

EDGAR KNIGHT.

Witnesses:
HENRY KNIGHT,
JOSEPH KELLOGG.

(No Model.)

C. RICHTMANN.

COIN AND LETTER SCALE.

No. 295,809. Patented Mar. 25, 1884.

Fig. 1.

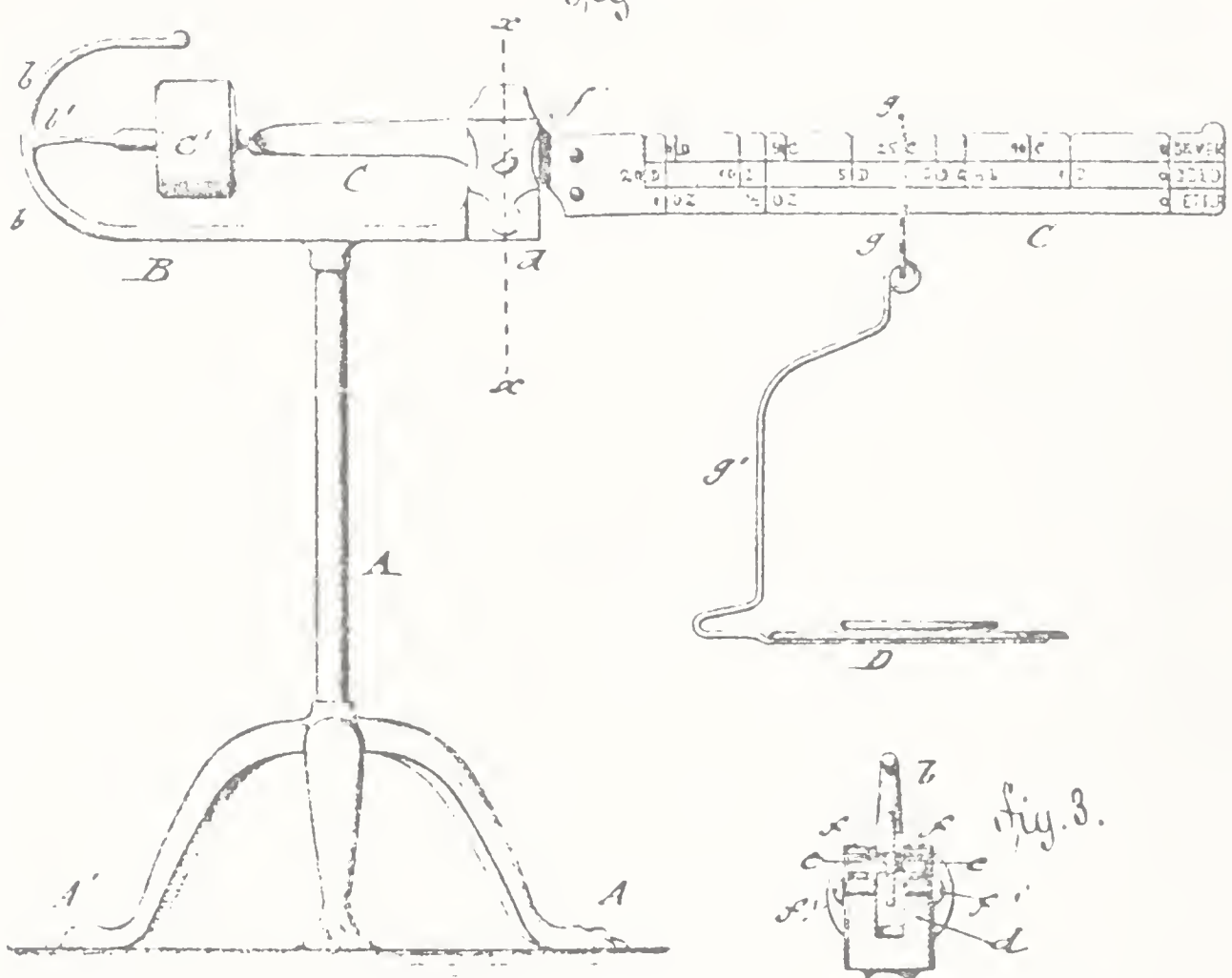


Fig. 3.

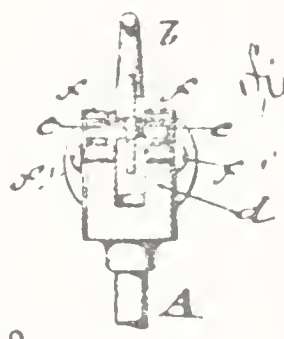


Fig. 2.

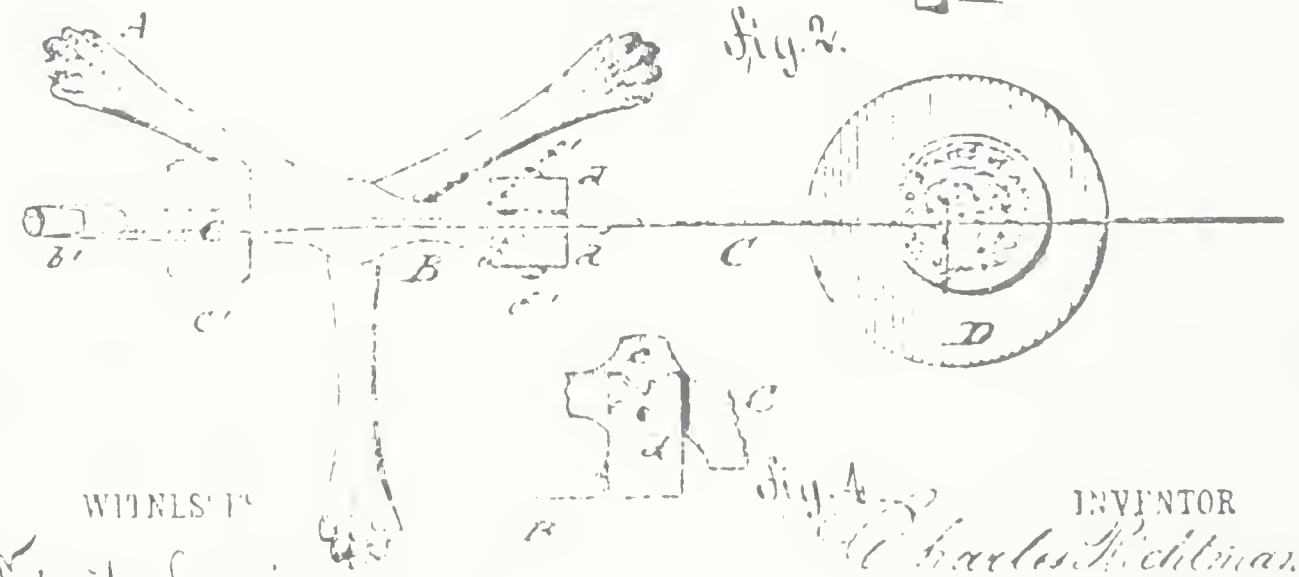


Fig. 4.

WITNESSES:

INVENTOR

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES RICHTMANN, OF NEW YORK, N. Y., ASSIGNOR TO H. RICHTMANN & CO., OF SAME PLACE.

COIN AND LETTER SCALE.

SPECIFICATION forming part of Letters Patent No. 295,809, dated March 25, 1884.

Application filed October 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RICHTMANN, of the city, county, and State of New York, have invented certain new and useful Improvements in Coin and Letter Scales, of which the following is a specification.

This invention has reference to an improved coin and letter scale, which, in contradistinction to the letter-scales heretofore in use, is made with one fulcrum only and capable of a high degree of accuracy.

The invention consists of a supporting-standard having a horizontal bar that has a hooked-shaped guard at one end, provided with a central index-point for the inner weighted end of the oscillating scale beam, and that has at the other end bearings for the knife-edge pivots of the same. The outwardly-extending opposite end of the scale-beam is provided with graduations and notches for coins and letters of certain weights, which graduations extend inwardly from the outer end toward the fulcrum, while the notches serve for recessing the sliding link of a scale-pan suspended from the beam.

In the accompanying drawings, Figure 1 represents a side elevation of my improved coin and letter scale. Fig. 2 is a plan of the same, partly in section. Fig. 3 is a detail vertical transverse section on line *x x*, Fig. 1; and Fig. 4 is a detail side view, showing the bearings and knife-edged pivots of the beam-scale.

Similar letters of reference indicate corresponding parts.

A in the drawings represents an upright supporting-standard, which is supported on feet A' or on a suitably-weighted base.

To the upper end of the standard A is applied a horizontal arm, B, which is bent at one end into the shape of a semicircular hook or guard, *b*, at the center of which is arranged an inwardly-extending index or pointer, *b'*. At the opposite end of the horizontal arm B are arranged vertical bearings *d d* for the knife-edged pivots *e e* of a scale-beam, C, which is made tapering at the end adjoining the index *b'*. A weight, C', is arranged at the inner end of the scale-beam C, which is adapted to oscillate vertically between the end of the hook or guard *b* and the horizontal arm B, which acts thereby as stops to limit the oscillations of the scale-beam. The bearings *d d* are provided with tapering recesses *e'* for the knife-edged pivots or fulcrum *e* of the scale-beam, which pivots are retained in said recesses *e'* by angular cap-plates *f f*, which are secured by fastening-screws *f'* to the outside of the bearings *d d*, their upper ends lapping over the bearings *d d* and the pivots *e e* of the scale-beam, as shown in Fig. 3. By this arrangement the scale-beam is retained in position, and cannot be removed from the horizontal supporting-arm B. The outer end of the scale-beam C is provided with a series of graduations or scales extending from the zero-line near the outer end of the beam toward the fulcrum thereof. The upper series or scale, C', is arranged to indicate the weights of silver coins, the middle scale, C², to indicate the weights of gold coins, and the lower scale, C³, is graduated to serve as a letter-scale. The graduations of the upper scale are marked, respectively, "10 c." for ten cents, "25 c." for twenty-five cents, "50 c." for fifty cents, and "1 D." for one dollar, and the upper edge of the scale beam is provided with notches corresponding with these graduations. The graduations of the middle scale are marked "1 D." for one gold dollar, "2½ D." for a quarter-eagle, "3 D." for a three-dollar gold-piece, "5 D." for a half-eagle, "10 D." for an eagle, and "20 D." for a double-eagle, and the upper edge of the scale-beam is provided with notches to correspond with these graduations. The graduations of the lower scale are marked "½ oz." for one-half ounce, "1 oz." for one ounce, and the upper edge of the beam is provided with notches to correspond with these graduations. A slotted slide-link, *g*, is placed on the beam, and a suspension-arm, *g'*, supporting a scale-pan, D, is attached to the lower end of said slide-link. If the slide-link be placed in the notch of the graduating-line indicating a half eagle, and one of the latter be placed in the scale-pan, the beam will remain balanced, if the half eagle be a genuine one, the index *b'* serving to indicate the slightest deviation. If any other gold coin or a silver

coin or a letter be placed on the scale-pan and the slide-link adjusted to its proper position, according to the article being weighed, the beam will respond in a very accurate manner, the tapering end of the beam, in connection with the index *b'*, being in alignment when the beam is balanced.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A scale for coins and letters, comprising a supporting-standard, a horizontal supporting-arm attached to said standard, provided with a hook-shaped guard having an inward projection or index at the center of the hook, a scale-beam pivoted in said bearings, one end of which is provided with a weight adapted to oscillate within the hook-shaped guard, being in alignment with the index thereof when balanced, the outer end of said beam being graduated, a slide-link on said scale-beam, and a scale-pan suspended from said link, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES RICHTMANN.

Witnesses:

PAUL GOEPEL,

SIDNEY MANN.

(No Model.)

C. SMITH & J. J. WELLS.

COIN TESTER AND INDICATOR.

No. 259,338 Patented June 13, 1882.

FIG. 1

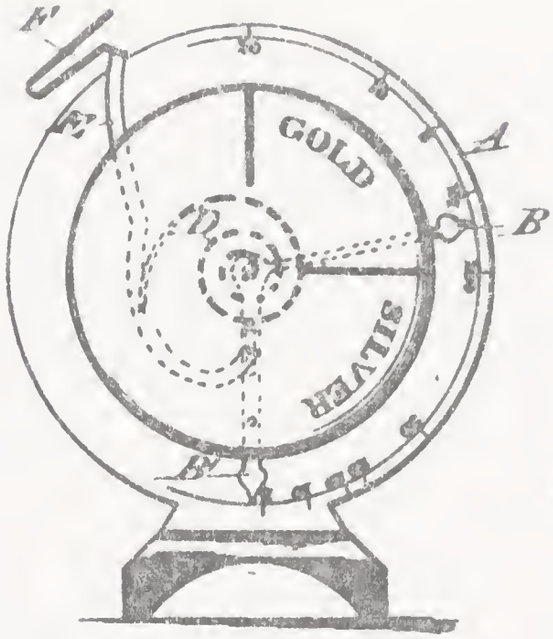


FIG 3

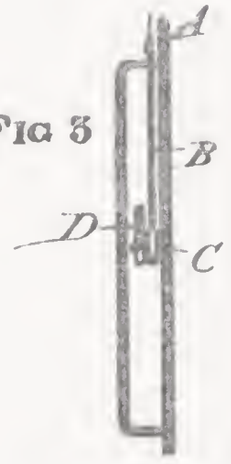
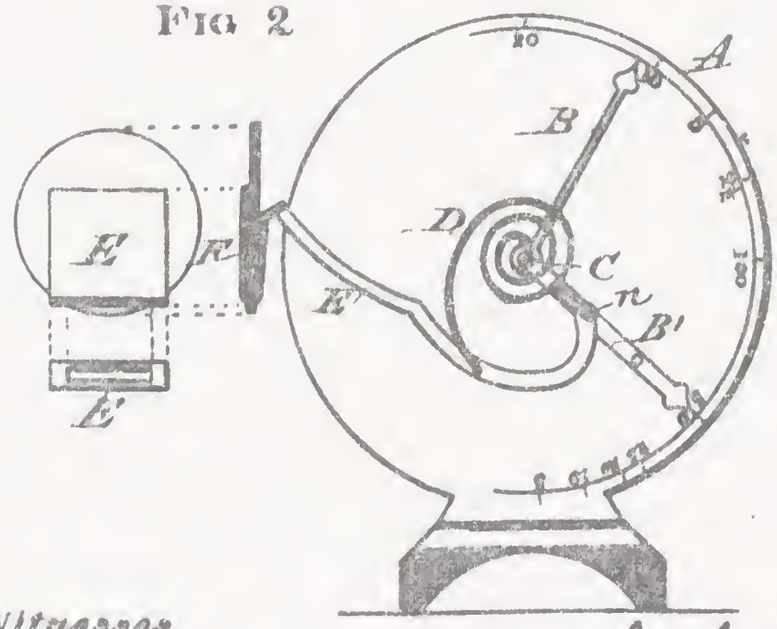


FIG 2



Witnesses
Wilmer Bradford
Charles B. Mowry

Inventors
C. Smith and
John J. Wells.
By Chas. M. Smith.
Attorney.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 259,338, dated June 13, 1882

Application filed November 10, 1881. (No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, and residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Coin Tester and Indicator, of which the following is a specification.

The object of our invention is to provide a means whereby spurious coins and coins of short weight may be easily and quickly detected.

We accomplish this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the dial with cap for covering the mechanism in position. Fig. 2 is also a front elevation of the dial and stand with cap removed. Fig. 3 is a vertical section in elevation.

Similar letters refer to similar parts throughout the several views.

Our indicating dial A is mounted upon a stand, as shown, and provided with a scale for testing gold coins of the denomination of two dollars and a half, ($2½,) five dollars, ($5,) ten dollars, ($10,) and twenty dollars, ($20,) and the word "gold" is marked beneath these figures, which figures and scale occupy about one quarter of the face of the dial. Beneath this gold scale, above described, we place the scale for silver coins, which consists of the numerals five, (5,) ten, (10,) twenty, (20,) twenty-five, (25,) fifty, (50,) and one hundred, (100,) the latter representing one dollar, or one hundred cents, and the former figures from five cents to fifty cents. This scale is designated by the word "silver."

The hands or pointers B B' operate on a pin, C, upon the face of the dial, the outer end of which is split to receive a spring, D, which latter connects with the arm of the coin-holder E. To the lower end of the arm of the coin holder is connected a bent pin, *a*, which operates in a slot made in the pointer or hand B', so as to give play to the coin holder and take away that rigidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flattened piece of metal, and is bent over upon itself to form a slot, F, to receive the edge of a coin and retain it in position while being tested.

In practice we make the spring of such tension, and adjust the indicators or hands with reference thereto, that when a genuine piece of coin is put into the receiver or coin holder the denomination will be registered or indicated by one of the pointers or hands upon the dial, either in gold or silver, as the case may be. For instance, if the coin be a five cent piece the silver indicating hand will point to and be in the exact line with the figure 5 on the dial, and so on from the smallest denomination to the largest, on both the gold and silver scales. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been tampered with, the hands will fall short of the figures or marks of the scale which the coin represents, and thus show to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that deception which is now so largely practiced in money exchanges.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin holder E, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1881.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
C. W. M. SMITH,
WILMER BRADFORD.

(No Model.)

G. SMITH & J. J. WELLS.

COIN TESTER AND INDICATOR.

No. 259,338 Patented June 13, 1882.

FIG 1

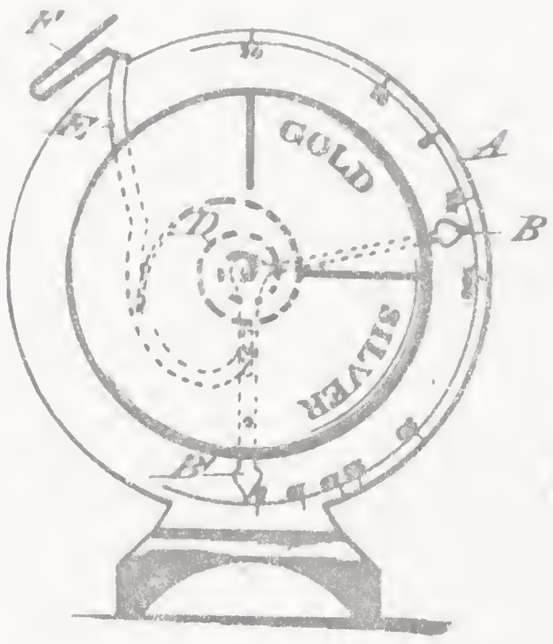


FIG 3

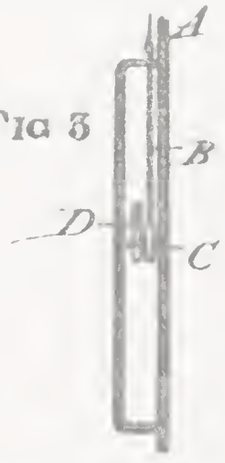
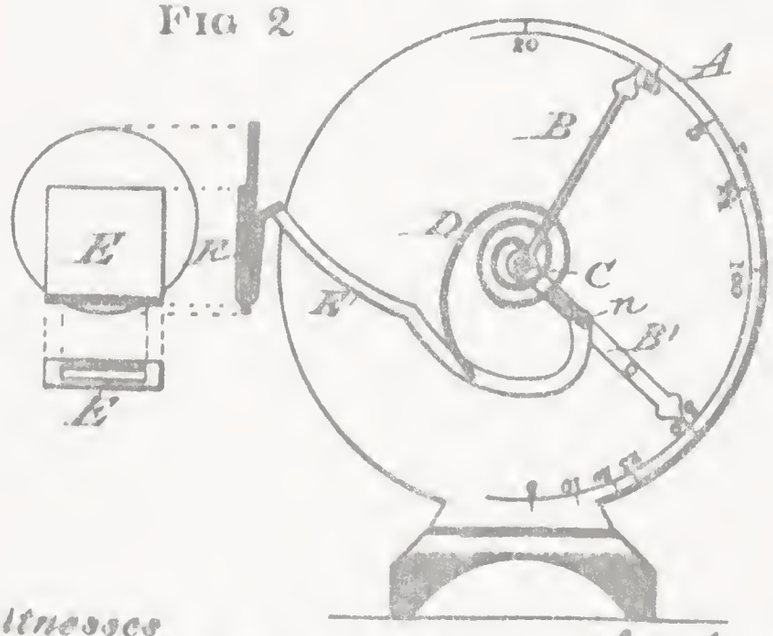


FIG 2



Witnesses
Wilmer Bradford
Charles E. Mowry

Inventors
G. Smith and
John J. Wells.
By E. W. M. Smith.
Attorney.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA.

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 259,339, dated June 13, 1882.

Application filed November 10, 1881. (No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, and residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Coin Tester and Indicator, of which the following is a specification.

The object of our invention is to provide a means whereby spurious coins and coins of short weight may be easily and quickly detected.

We accomplish this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the dial with cap for covering the mechanism in position. Fig. 2 is also a front elevation of the dial and stand with cap removed. Fig. 3 is a vertical section in elevation.

Similar letters refer to similar parts throughout the several views.

Our indicating-dial A is mounted upon a stand, as shown, and provided with a scale for testing gold coins of the denomination of two dollars and a half, ($2\frac{1}{2}$,) five dollars, ($5,) ten dollars, ($10,) and twenty dollars, ($20,) and the word "gold" is marked beneath these figures, which figures and scale occupy about one-quarter of the face of the dial. Beneath this gold-scale, above described, we place the scale for silver coins, which consists of the numerals five, (5,) ten, (10,) twenty, (20,) twenty-five, (25,) fifty, (50,) and one hundred, (100,) the latter representing one dollar, or one hundred cents, and the former figures from five cents to fifty cents. This scale is designated by the word "silver."

The hands or pointers B B' operate on a pin, C, upon the face of the dial, the outer end of which is split to receive a spring, D, which latter connects with the arm of the coin-holder E. To the lower end of the arm of the coin-holder is connected a bent pin, a, which operates in a slot made in the pointer or hand B', so as to give play to the coin-holder and take away that rigidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flattened piece of metal, and is bent over upon itself to form a slot, F, to receive the edge of a coin and retain it in position while being tested.

In practice we make the spring of such tension, and adjust the indicators or hands with reference thereto, that when a genuine piece of coin is put into the receiver or coin-holder the denomination will be registered or indicated by one of the pointers or hands upon the dial, either in gold or silver, as the case may be. For instance, if the coin be a five-cent piece the silver-indicating hand will point to and be in the exact line with the figure 5 on the dial, and so on from the smallest denomination to the largest, on both the gold and silver scales. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been tampered with, the hands will fall short of the figures or marks of the scale which the coin represents, and thus show to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that deception which is now so largely practiced in money exchanges.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin-holder E, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1881.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
O. W. M. SMITH,
WILMER BRADFORD.

(No Model.)

G. SMITH & J. J. WELLS.

COIN TESTER AND INDICATOR.

No. 259,338. Patented June 13, 1882.

FIG 1

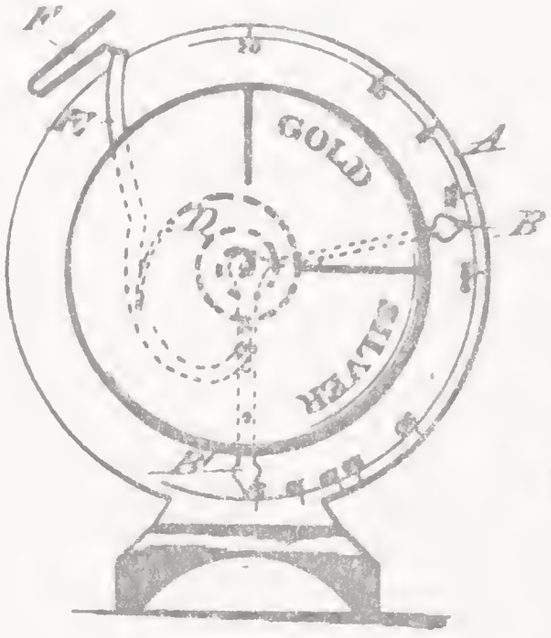


FIG 3

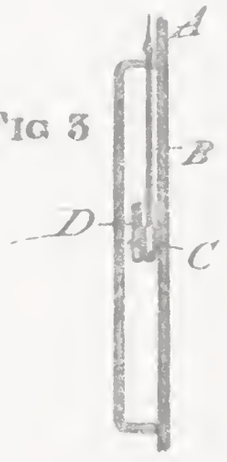
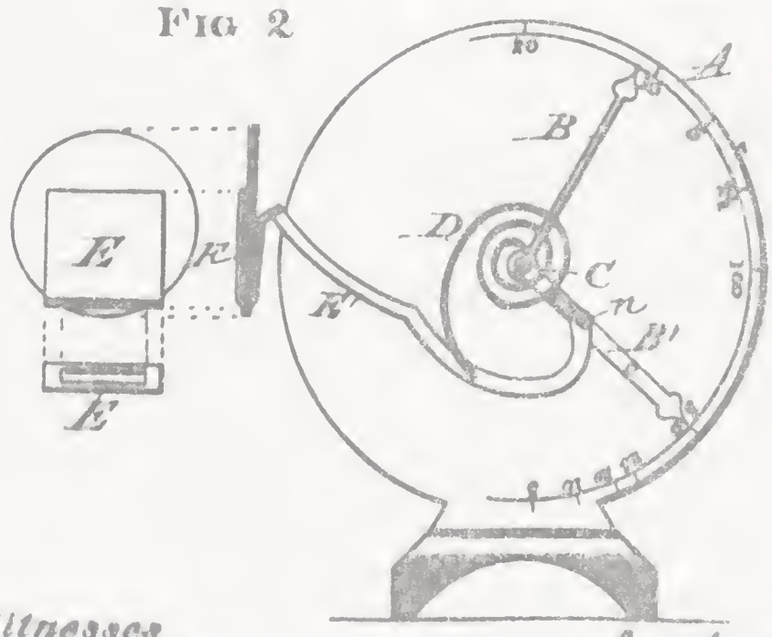


FIG 2



Witnesses
Wilmer Bradford
Charles E. Mowry

Inventors
G. Smith and
John J. Wells.
By Wm. Smith.
Attorney.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA.

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 269,236, dated June 13, 1882.

Application filed November 14, 1881. (No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, and residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Coin Tester and Indicator, of which the following is a specification.

The object of our invention is to provide a means whereby spurious coins and coins of short weight may be easily and quickly detected.

We accomplish this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the dial with cap for covering the mechanism in position. Fig. 2 is also a front elevation of the dial and stand with cap removed. Fig. 3 is a vertical section in elevation.

Similar letters refer to similar parts throughout the several views.

Our indicating-dial A is mounted upon a stand, as shown, and provided with a scale for testing gold coins of the denomination of two dollars and a half, ($2½,) five dollars, ($5,) ten dollars, ($10,) and twenty dollars, ($20,) and the word "gold" is marked beneath these figures, which figures and scale occupy about one-quarter of the face of the dial. Beneath this gold scale, above described, we place the scale for silver coins, which consists of the numerals five, (5,) ten, (10,) twenty, (20,) twenty-five, (25,) fifty, (50,) and one hundred, (100,) the latter representing one dollar, or one hundred cents, and the former figures from five cents to fifty cents. This scale is designated by the word "silver."

The hands or pointers B B′ operate on a pin, C, upon the face of the dial, the outer end of which is split to receive a spring, D, which latter connects with the arm of the coin-holder E. To the lower end of the arm of the coin-holder is connected a bent pin, *a*, which operates in a slot made in the pointer or hand B′, so as to give play to the coin-holder and take away that rigidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flattened piece of metal, and is bent over upon itself to form a slot, F, to receive the [illegible] and retain it in position while [illegible] tested.

In practice we make the spring of such tension, and adjust the indicators or hands with reference thereto, that when a genuine piece of coin is put into the receiver or coin-holder the denomination will be registered or indicated by one of the pointers or hands upon the dial, either in gold or silver, as the case may be. For instance, if the coin be a five-cent piece the silver-indicating hand will point to and be in the exact line with the figure 5 on the dial, and so on from the smallest denomination to the largest, on both the gold and silver scales. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been tampered with, the hands will fall short of the figures or marks of the scale which the coin represents, and thus show to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that deception which is now so largely practiced in money exchanges.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin-holder E, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1881.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
O. W. M. SMITH,
WILMER BRADFORD.

(No Model.)

G. SMITH & J. J. WELLS.

COIN TESTER AND INDICATOR.

No. 259,338. Patented June 13, 1882.

FIG 1

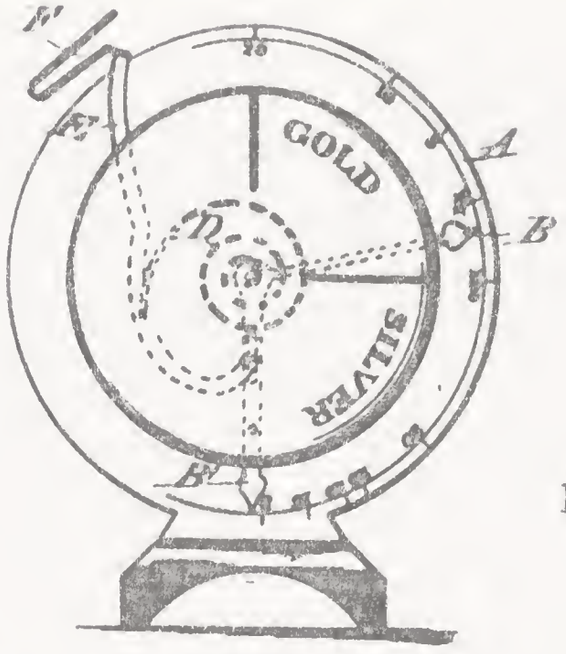
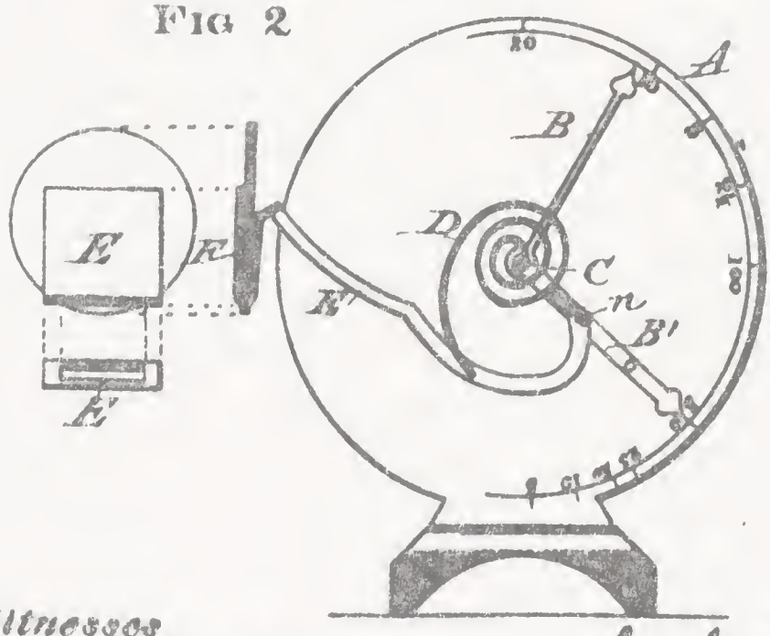


FIG 3

FIG 2



Witnesses
Wilmer Bradford
Charles E. Mitchell

Inventors
G. Smith and
John J. Wells.
By E. M. Smith.
Attorney.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA.

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 259,338, dated June 13, 1882.

Application filed September 11, 1881. (No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, and residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Coin Tester and Indicator, of which the following is a specification.

The object of our invention is to provide a means whereby spurious coins and coins of short weight may be easily and quickly detected.

We accomplish this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the dial with cap for covering the mechanism in position. Fig. 2 is also a front elevation of the dial and stand with cap removed. Fig. 3 is a vertical section in elevation.

Similar letters refer to similar parts throughout the several views.

Our indicating dial A is mounted upon a stand, as shown, and provided with a scale for testing gold coins of the denomination of two dollars and a half, ($2½,) five dollars, ($5,) ten dollars, ($10,) and twenty dollars, ($20,) and the word "gold" is marked beneath these figures, which figures and scale occupy about one-quarter of the face of the dial. Beneath this gold scale, above described, we place the scale for silver coins, which consists of the numerals five, (5,) ten, (10,) twenty, (20,) twenty-five, (25,) fifty, (50,) and one hundred, (100,) the latter representing one dollar, or one hundred cents, and the former figures from five cents to fifty cents. This scale is designated by the word "silver."

The hands or pointers B B′ operate on a pin, C, upon the face of the dial, the outer end of which is split to receive a spring, D, which latter connects with the arm of the coin-holder E. To the lower end of the arm of the coin-holder is connected a bent pin, *a*, which operates in a slot made in the pointer or hand B′, so as to give play to the coin holder and take away that rigidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flattened piece of metal, and is bent over upon itself to form a slot, F, to receive the edge of a coin and retain it in position while being tested.

In practice we make the spring of such tension, and adjust the indicators or hands with reference thereto, that when a genuine piece of coin is put into the receiver or coin holder the denomination will be registered or indicated by one of the pointers or hands upon the dial, either in gold or silver, as the case may be. For instance, if the coin be a five-cent piece the silver indicating hand will point to and be in the exact line with the figure 5 on the dial, and so on from the smallest denomination to the largest, on both the gold and silver scales. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been tampered with, the hands will fall short of the figures or marks of the scale which the coin represents, and thus show to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that deception which is now so largely practiced in money exchanges.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin holder E, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1881.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
O. W. M. SMITH,
WILMER BRADFORD.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 259,338, dated June 13, 1882

Application filed September 11, 1881. (No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, and residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Coin Tester and Indicator, of which the following is a specification.

The object of our invention is to provide a means whereby spurious coins and coins of short weight may be easily and quickly detected.

We accomplish this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the dial with cap for covering the mechanism in position. Fig. 2 is also a front elevation of the dial and stand with cap removed. Fig. 3 is a vertical section in elevation.

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The hands or pointers B B' operate on a pin, C, upon the face of the dial, the outer end of which is split to receive a spring, D, which latter connects with the arm of the coin-holder E. To the lower end of the arm of the coin-holder is connected a bent pin, *a*, which operates in a slot made in the pointer or hand B', so as to give play to the coin holder and take away that rigidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flattened piece of metal, and is bent over upon itself to form a slot, F, to receive the edge of a coin and retain it in position while being tested.

In practice we make the spring of such tension, and adjust the indicators or hands with reference thereto, that when a genuine piece of coin is put into the receiver or coin holder the denomination will be registered or indicated by one of the pointers or hands upon the dial, either in gold or silver, as the case may be. For instance, if the coin be a five-cent piece the silver-indicating hand will point to and be in the exact line with the figure 5 on the dial, and so on from the smallest denomination to the largest, on both the gold and silver scales. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been tampered with, the hands will fall short of the figures or marks of the scale which the coin represents, and thus show to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that deception which is now so largely practiced in money exchanges.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin holder E, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1881.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
C. W. M. SMITH,
WILMER BRADFORD.

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Search Room

S. A. FIELD.

Counterfeit Coin Detector and Coin Receiver.

No. 203,719. Patented May 14, 1878.

Fig. 1.

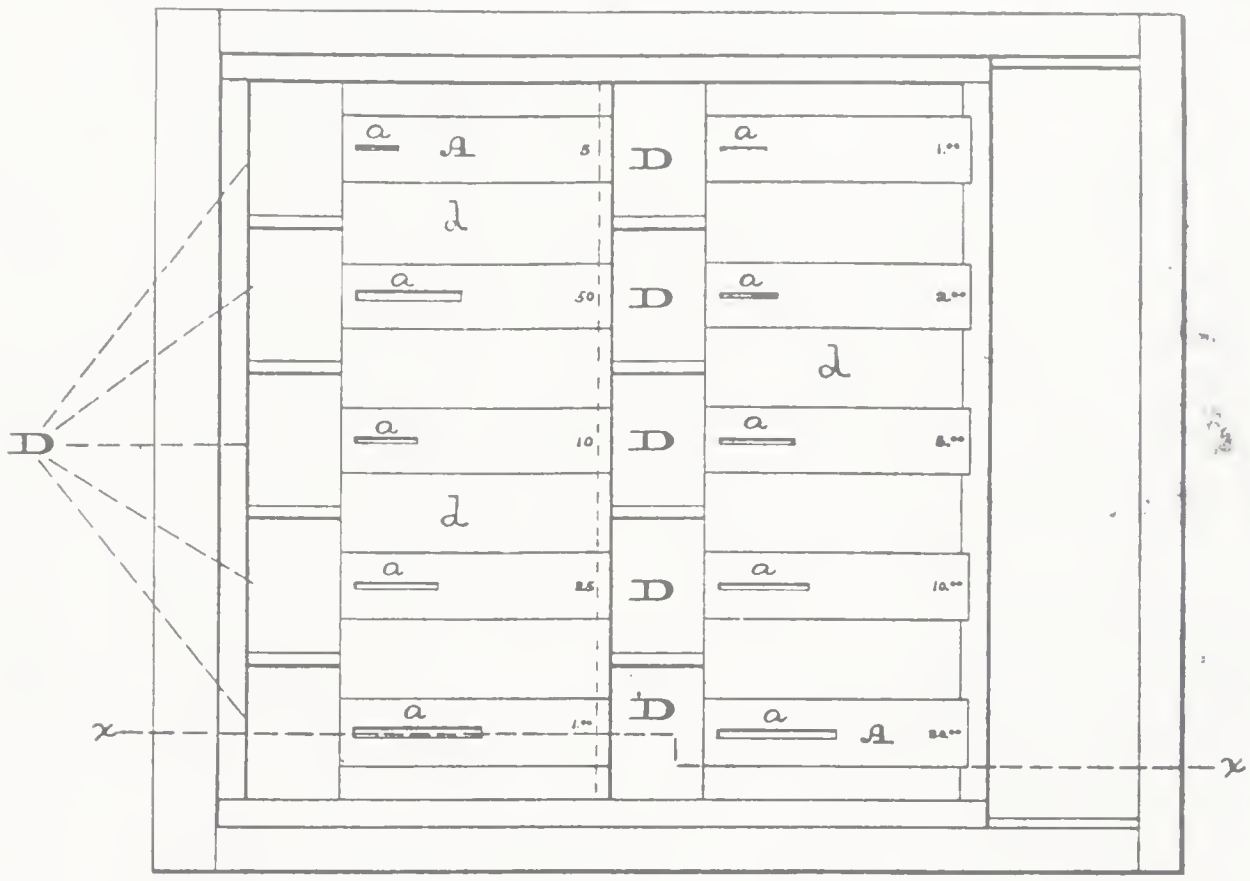
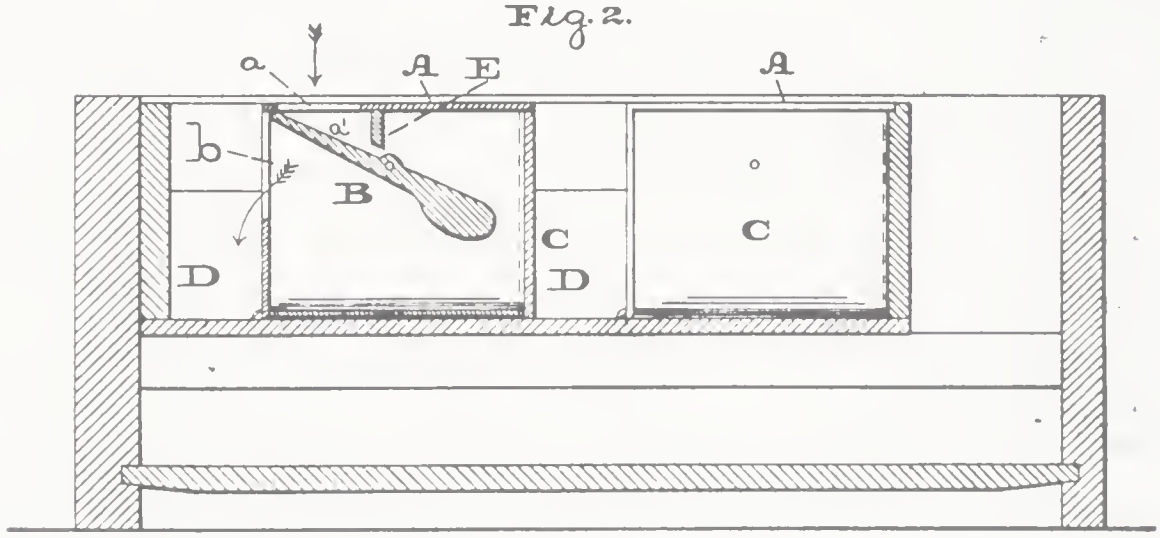


Fig. 2.



Witnesses:

A. P. Grant,

W. F. Kircher

Inventor:

Saml. A. Field,

by John A. Diederich

ATTORNEY.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SAMUEL A. FIELD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTER AND COIN-RECEIVER.

Specification forming part of Letters Patent No. **203,719**, dated May 14, 1878; application filed March 1, 1878.

To all whom it may concern:

Be it known that I, SAMUEL A. FIELD, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Counterfeit-Coin Detecter and Cash-Receiver, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view of the device embodying my invention. Fig. 2 is a vertical section thereof in line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

My invention consists of coin-detecters for various denominations, in combination with boxes, receptacles, or apartments, so arranged that each genuine coin may be deposited in its respective box, thus providing means of detecting spurious coin and collecting the genuine coin, each denomination by itself.

Referring to the drawings, A represents a series of coin weighers or detecters, which are properly supported in a drawer or on a counter, table, or elsewhere, said detecters being for various denominations, and consisting generally of weighted poises, each inclosed within its own case C, having an inlet-throat, *a*, and a discharge-throat, *b*. The genuine coin admitted to the poise through the throat *a* will depress said poise, and then roll therefrom through the throat *b*, whereby it is discharged from the case C and its genuineness indicated. The spurious coin will not materially depress the poise, and this act will expose the nature of the coin.

These features are old, and no invention exists therein.

D represents boxes, receptacles, or apartments, each being arranged in relation to the discharge-throat of one of the coin-detecters, so that as the genuine coin leaves said throat it will fall into said box. Should the detecters be placed on a table or counter, the boxes D may be beneath the same, in which case openings will be made in the top of the table or counter for directing the coin from the detecters to the boxes.

It will be seen that spurious coin may be readily detected, and genuine coin will fall into the proper receptacles or boxes. Between the cases C there are blocks *b*, which support the detecters and enlarge the space necessary for the receiving-boxes.

As there is a detecter for each coin most in circulation and a box or receptacle for each detecter, it is evident that coin of each denomination will be collected by itself, thus preventing confusion in making change or counting the cash received, and presenting other advantages which will be readily appreciated by the store-keeper, clerk, cashier, or other receiver of the money.

Depending from the top plate of the case of the detecter, adjacent to the inlet-throat *a*, is a bar, E, which projects toward the poise, so as to occupy a position between the axis and central portion of the outer end of the poise.

It will be seen that, when a coin is inserted in the throat *a* and dropped on the right-lined face-poise *a'*, the bar E prevents the coin rolling toward the axis of the poise, whereby, as the coin is thus directed to the proper part of the poise, the action of the latter is unfailing and reliable in indicating genuine and spurious pieces.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combined coin-detecter and cash-receiver, the same consisting of a series of coin-detecters for various denominations, each inclosed in its own case, and separated by blocks *d*, in combination with the series of boxes D, arranged side by side in front of the outlet-throats of the detecters, all as set forth.

SAMUEL A. FIELD.

Witnesses:

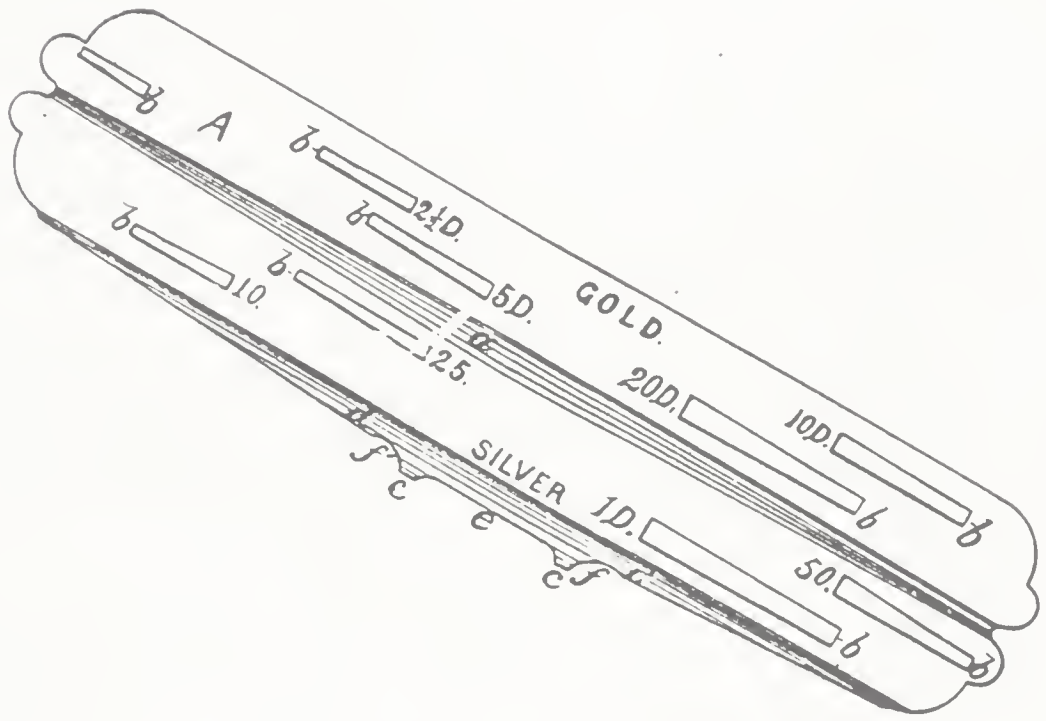
JOHN A. WIEDERSHEIM,

H. E. GARSED.

J. A. THOMPSON.

Counterfeit Coin Detector.

No. 224,807. Patented Feb. 24, 1880.



WITNESSES.

Wm. Zimmerman

Chas. H. Wood

INVENTOR.

John A. Thompson

By Gridley & Co

Atty's.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTER.

SPECIFICATION forming part of Letters Patent No. 224,807, dated February 24, 1880.

Application filed January 13, 1880.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Counterfeit-Coin Detecters; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which the figure represents a perspective view of a counterfeit-coin detecter embodying my improvements.

The object of my invention is to provide a device that will readily and surely detect counterfeit from genuine coin; and my invention consists in the construction of the device or detecter, as hereinafter described and claimed.

It is well known that when coin is made wholly or in part of base metal it is lighter than genuine coin of the same size, and if made of the same weight it must necessarily be thicker or larger in diameter than the genuine coin.

In the drawing, A represents a plate of sheet metal of known gage and weight, preferably of brass or German silver, and may be of any desired dimensions, and which is first stamped from a flat piece of metal, and its depending and tapering sides or flanges afterward formed as shown, so as to form the fulcrum for the plate.

In the center of the plate, and running from end to end, is a struck-up rib, *a*, which stiffens and strengthens the plate and divides it into two parts, one side of which is adapted and marked for gold coin and the other for silver. On either side of the rib *a* is a series of slots or perforations, *b*, each of which is of the same width for about one-third of its length, and then gradually increasing in width, so as to form a tapering slot toward the fulcrum of the plate, said slots being of a width sufficient to receive and hold the coin of the desired denomination without allowing it to pass wholly through.

Each of the slots *b* is made wider at its end nearest the fulcrum of the plate, so as to readily receive the coin, while its other end is made of a width corresponding to the thickness of the coin, so that when a genuine coin is placed and held within the slot corresponding to its denomination it will cause the plate to tip down over the fulcrum *c* nearest to such coin, the fulcrum *c* being previously adjusted for that purpose. If the coin is made thicker than and so as to correspond in weight with the genuine coin it will not pass within the desired slot to its proper place, and will, consequently, fail to tip the plate on its fulcrum.

It will be observed that the flanges *d* are made tapering from at or about their fulcrums to their ends, and that the plate A is provided with two fulcrums, *c*, which are formed out of and as a part of the flanges *d*. The space *e* between the fulcrums *c* need not necessarily be cut out, and the notches *f* may be filed away (more or less) for the purpose of adjusting the fulcrums to the plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, substantially as shown and described.

2. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

3. In a counterfeit-coin detecter, the plate A, provided with rib *a*, tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

JOHN A. THOMPSON.

Witnesses:
WM. ZIMMERMAN,
N. COWLES.

DESIGN.

J. T. McNALLY & W. H. HARRISON.

SCALES.

No. 12,795. Patented Feb. 28, 1882.

Fig. 1.

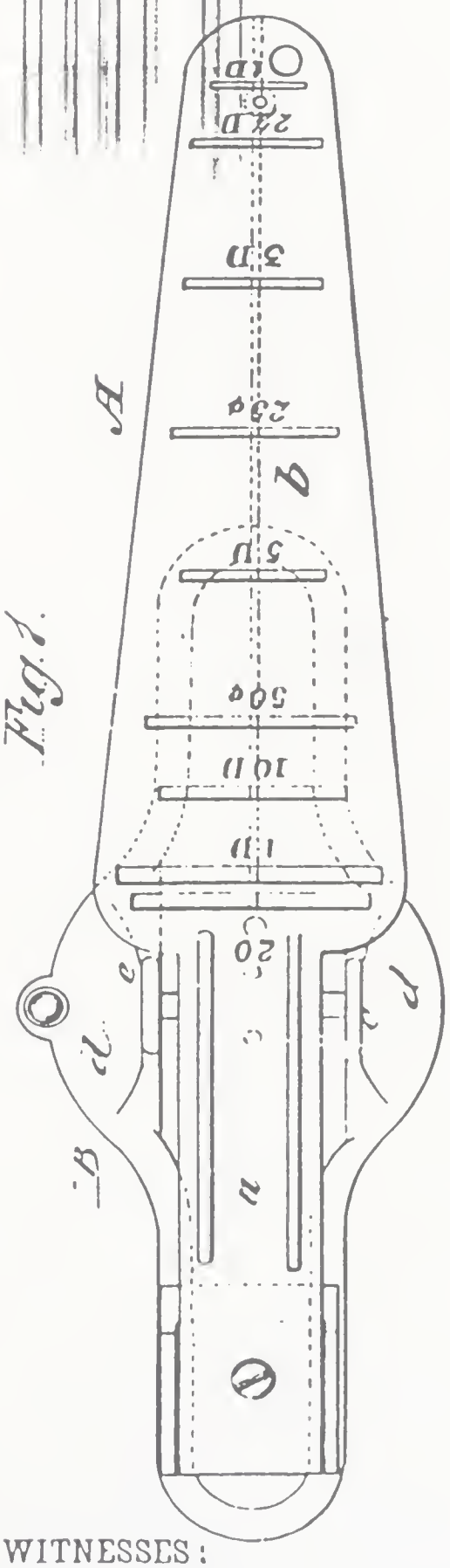
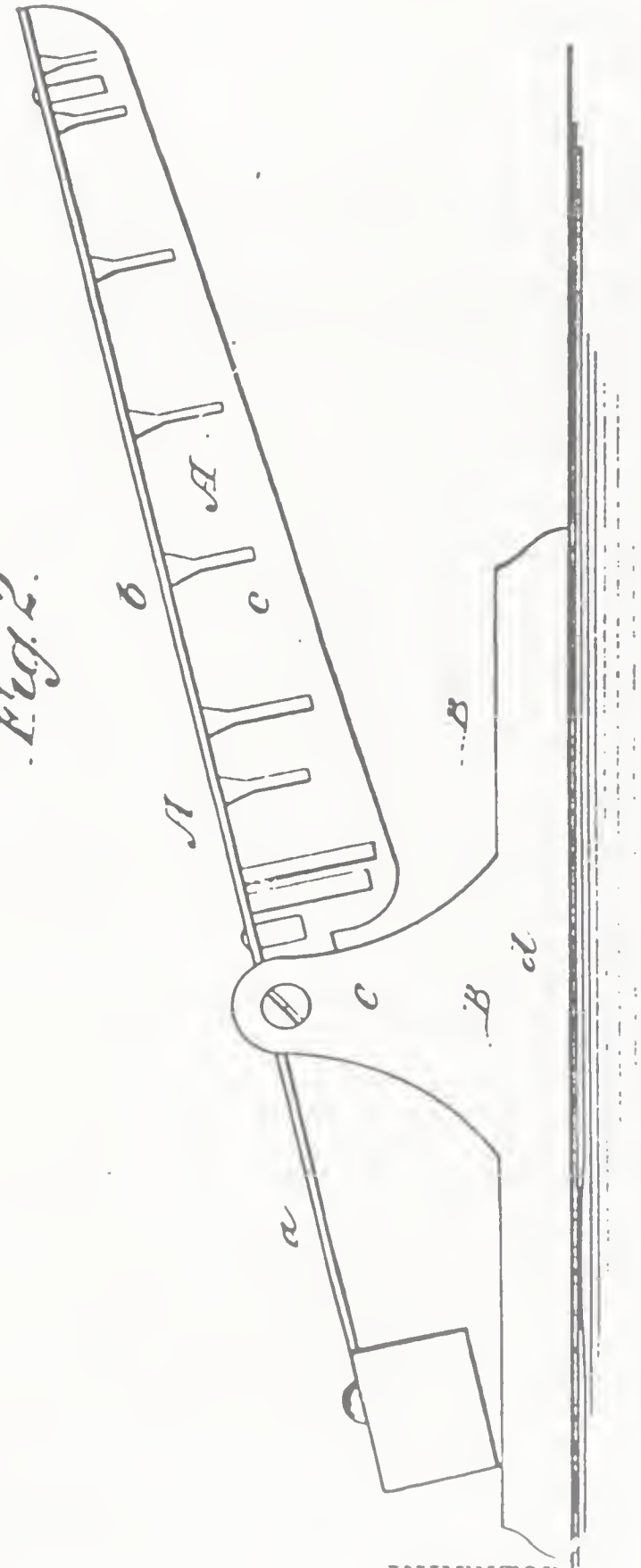


Fig. 2.



WITNESSES:

Thomas P. McArdle

C. Dalgreen

INVENTOR:

J. T. McNally

W. H. Harrison

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES T. McNALLY AND WALTER H. HARRISON, OF NEW YORK, N. Y.

DESIGN FOR SCALES.

SPECIFICATION forming part of Design No. 12,795, dated February 28, 1882.

Application filed January 6, 1882. Term of patent 7 years.

To all whom it may concern:

Be it known that we, JAMES T. McNALLY and WALTER H. HARRISON, of the city, county, and State of New York, have invented a new and Improved Design for Scales, of which the following is a full, clear, and exact description.

Reference is to be had to the following drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

In the drawings, Figure 1 is a plan view, and Fig. 2 a side view, of our newly designed scale.

A represents the beam, and B its supporting base. *a* is a portion having parallel sides, and *b* a portion having tapered sides, rounded end, and rounded at the vertices of the angles. *c* is a depending rib or flange on the under side of the beam. The whole presents an ornamental appearance to the eye. The base B is oblong in the direction of the length of beam A, and is widened at its mid-length by rounded side extensions, *d d*, at which place it is also formed with vertical flanges *e e* for support of the beam.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The design for scales herein shown and described, which consists in the oblong base B, having side extensions, *d*, and flanges *e*.

JAS. T. McNALLY.
W. H. HARRISON.

Witnesses:
GEO. D. WALKER,
C. SEDGWICK.

G. HOAG.

Combined Scale and Coin Tester.

No. 216,184. Patented June 3, 1879.

Fig: 1.

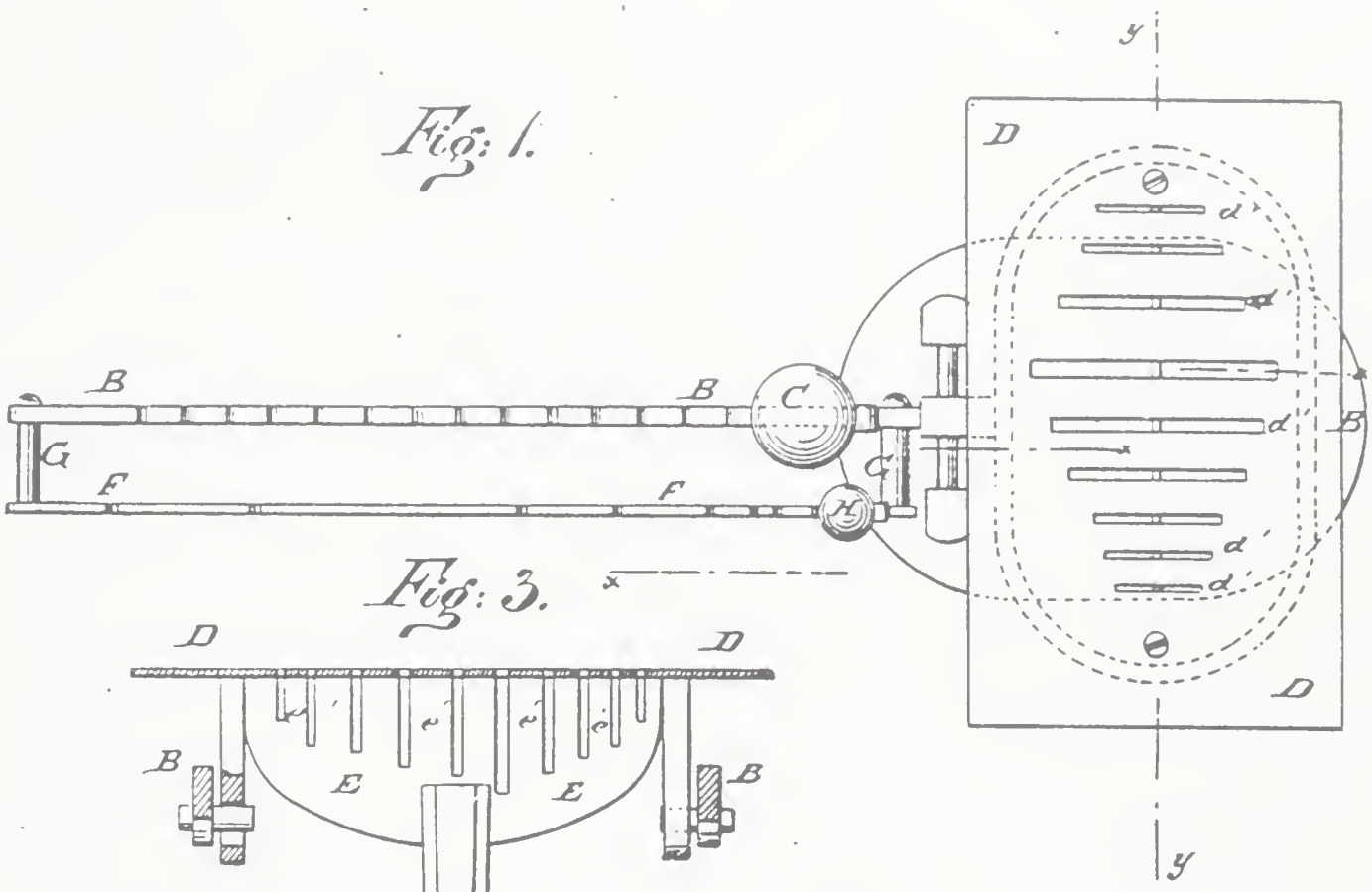


Fig: 3.

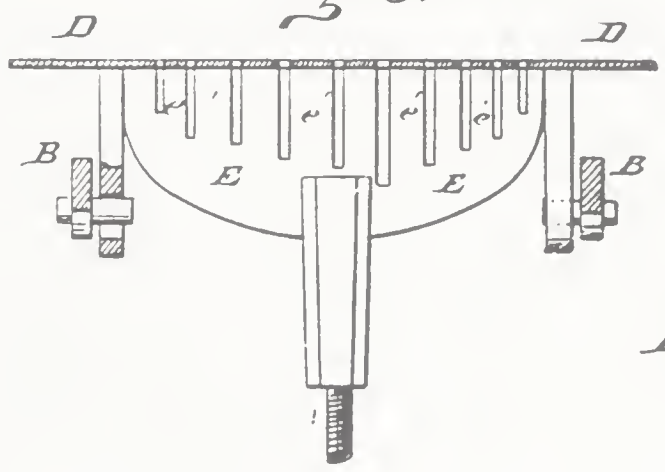


Fig: 2.

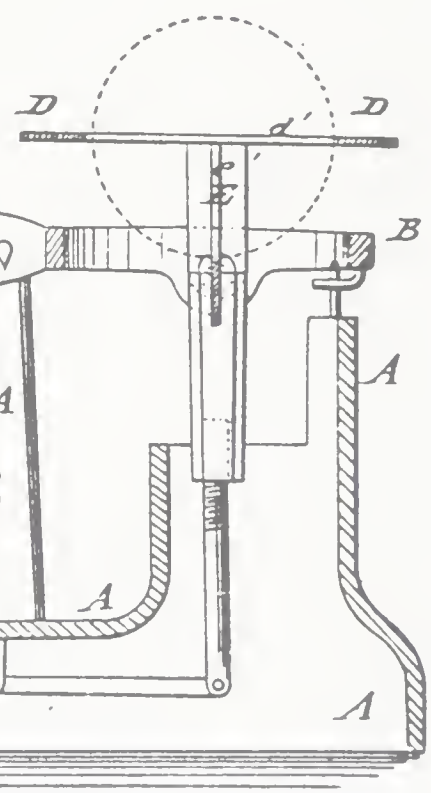
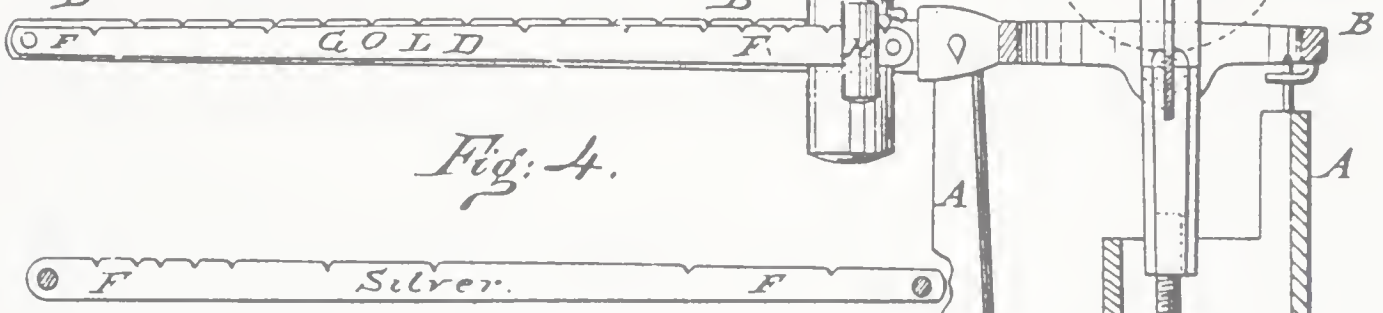


Fig: 4.



WITNESSES:

Chas. Nida.

L. Sedgwick

INVENTOR:

G. Hoag

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE HOAG, OF NEW YORK, N. Y.

IMPROVEMENT IN COMBINED SCALE AND COIN-TESTER.

Specification forming part of Letters Patent No. **216,184**, dated June 3, 1879; application filed March 27, 1879.

To all whom it may concern:

Be it known that I, GEORGE HOAG, of the city, county, and State of New York, have invented a new and Improved Combined Scale and Coin-Tester, of which the following is a specification.

Figure 1 is a top view of my improved device. Fig. 2 is a side view of the same, partly in section, through the broken line *x x*, Fig. 1. Fig. 3 is a detailed cross-section of the same, taken through the line *y y*, Fig. 1. Fig. 4 is a detail view of the reverse side of the coin-scale beam.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish scales for weighing letters and other mail-matter which shall be provided with appliances for testing the weight, size, and thickness of coins, and which at the same time shall be simple in construction and convenient and reliable in use.

The invention consists in the combination of the slotted vertical plate with the slotted scale-pan of a scales, for testing the size and thickness of gold and silver coins; and in the combination of the second beam and its weight with the main beam and its weight, and with the scale-pan provided with the slots, and the vertical plate provided with the slots for testing the weight, the size, and the thickness of gold and silver coins, as hereinafter fully described.

A represents the standard, B the main beam, C the weight, and D the pan or platform, of the scales, which parts are connected together and balanced in the usual way.

The scale-pan D is made flat, and has a series of slots, *d'*, formed through it to receive the different gold and silver coins, the slots toward one end of the pan D being intended for the gold coins, and those toward the other end being intended for the silver coins. The slots *d'* are made of a length and breadth equal to the diameter and thickness of the various coins, so as to test their size and thickness.

To the central part of the lower side of the pan D is attached the upper edge of a vertical plate, E, which has slots *e'* formed in it directly beneath the slots *d'* of the said pan D. The slots *e'* are made of a breadth equal to the breadth of the slots *d'*, and of a depth equal to half the length of the said slots *d'*, so that the coins will be held with their diameters in line with the scale-pan D.

F is the beam which is used for testing the weight of the coins, and which is connected at its ends with the main beam B by bolts, screws, or rivets G. The beam F is provided with a weight, H, for balancing the coins. In the upper edge of the beam F are formed notches at the various points where the weight H should stand to balance the various coins.

The notches for the gold coins should be marked upon one side of the beam F, and the notches for the silver coins should be marked upon the other side of the said beam, with the value of the coins to which they belong.

The slots *d'* in the scale-pan D may also be marked with the value of the coins to which they belong.

With this construction the device, while serving as a scale for weighing letters and other mail-matter, also serves as a test for the size, the thickness, and the weight of gold and silver coins.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the scale-pan D, consisting of a horizontal plate, provided with slots *d'*, and the vertical plate E, provided with the slots *e'*, and the supplemental scale-beam F, secured by the bolts G to the scale-beam B, so as to be parallel with the said beam, and provided with the weight H, with the main beam B and its weight C, substantially as and for the purpose set forth.

GEORGE HOAG.

Witnesses:

JAMES T. GRAHAM,

C. SEDGWICK.

E. STREET.

Counterfeit Coin Detector.

No. 209,145. Patented Oct. 22, 1878.

Fig. 1.

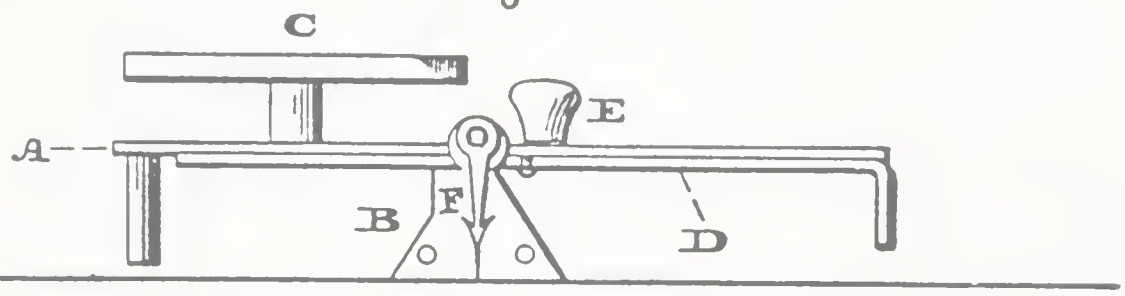


Fig. 2.

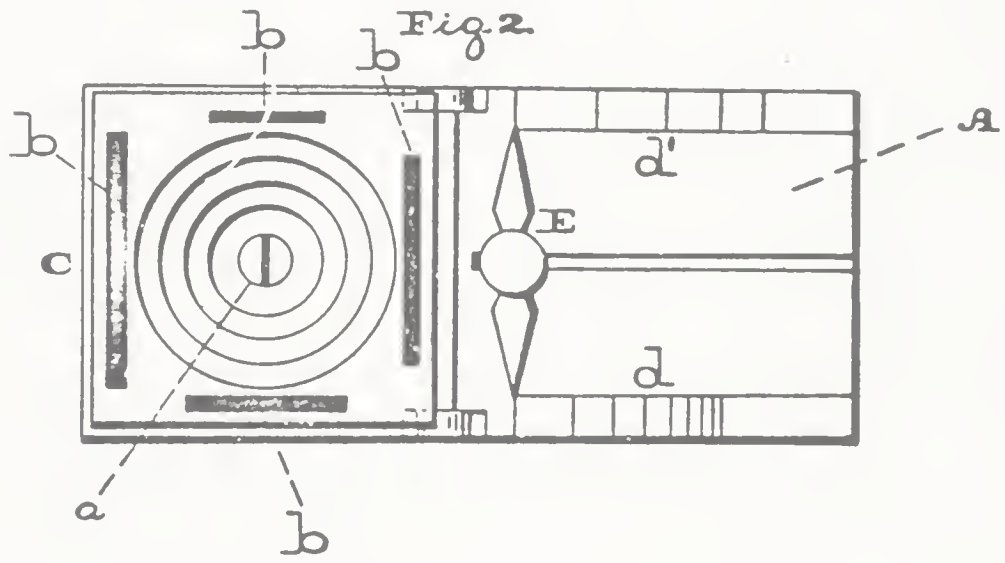
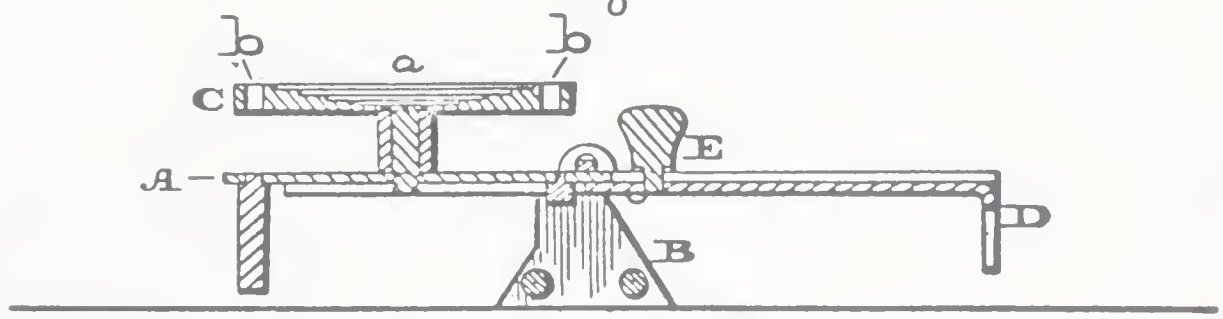


Fig. 3.



Witnesses:

Lewis F. Brous,

A. P. Grant.

Inventor:

Edwin Street,

by John A. Lindenberg

Attorney.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWIN STREET, OF SOUTH ORANGE, NEW JERSEY.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. **209,145**, dated October 22, 1878; application filed March 1, 1878.

To all whom it may concern:

Be it known that I, EDWIN STREET, of South Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Letter-Scale and Coin-Detecter, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the scale and detecter embodying my invention. Fig. 2 is a top view thereof. Fig. 3 is a longitudinal vertical section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of an implement adapted for the combined purposes of weighing letters and indicating the character of coin.

I employ a plate with a slide, an index, and an elevated tray with concentric concavities and slots, the operation whereof will be more fully set forth.

Referring to the drawings, A represents a poise or balance-plate, and B the standards thereof. On one side of the plate A there is supported a tray, C, on whose upper face is a series of concentric concavities, *a*, which increase in depth and are of diameters corresponding to those of various denominations of coin to be weighed, so that genuine coin will exactly fit the relative concavity.

In the tray there are also formed slots *b*, of dimensions corresponding to the thickness of genuine coin, whereby the latter will exactly fit the relative slot. To the plate A, on the side opposite to the tray C, there is fitted a slide, D, which carries a double index, E, overhanging the respective portion of the plate A, and pointing to postal and coin gradations *d d* formed on the said portion of the plate, the index being preferably constructed of spring metal, so as to produce friction between the plate and slide and prevent accidental movement of the latter during the operations of weighing letters or detecting coin.

In order to weigh a letter, the latter is placed on the tray C, and the slide D is moved until the plate is balanced, the tray being elevated to prevent contact of the letters, &c., with adjacent parts of the device. The weight of the letter may now be readily read off by observing the location of the index on the gradnation or postal scale *d*.

When coin is to be weighed the scale will be moved to bring the index over the graduations *d'*, opposite the one corresponding to the weight of the genuine coin. If the scale is in equilibrium, the coin may be considered genuine, subject to the further test of the manner in which the coin fits the relative concavity *a* and slot *b*.

It will be noticed that the slide D constitutes the counterpoise of the scale, thus dispensing with separate weights, and that the coins of different denominations are weighted on the same tray C, thus producing a simple and compact implement for the purposes intended.

For delicate weighing of coin and letters, I employ an auxiliary index or finger, F, which is secured to the axis of the plate A and sweeps over the adjacent standard B, having a central mark or characteristic for indicating the true weight of the genuine coin or registering with the gradnations *d d'* of the plate A.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The plate A and slide D, in combination with the elevated tray C, provided with concentric concavities *a* and surrounding slots *b*, substantially as and for the purpose set forth.

EDWIN STREET.

Witnesses:
ROBERT H. POLLOCK,
ELI LONG.

F. J. Herper.

Counterfeit Coin Detector.

No. 18,973. Patented Dec. 29, 1857.

Fig 2.

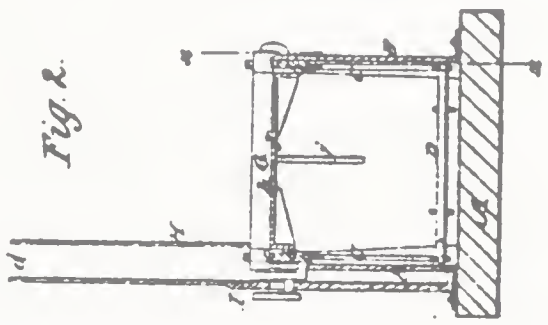


Fig 1.

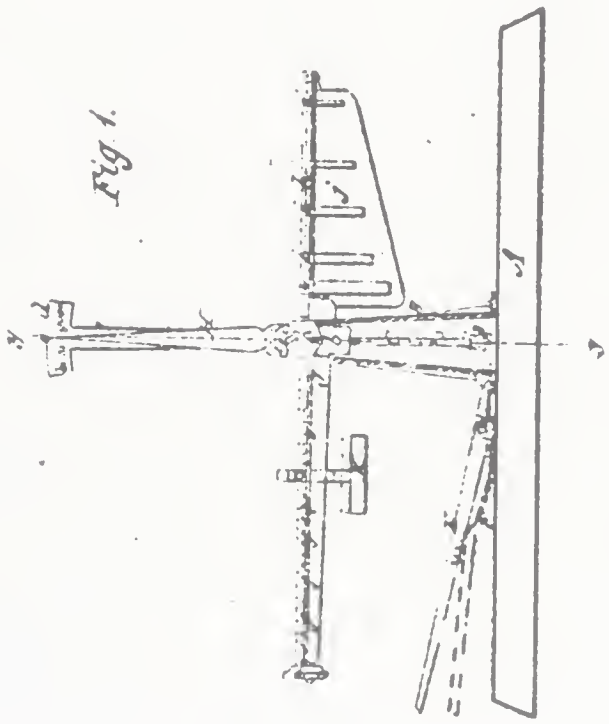
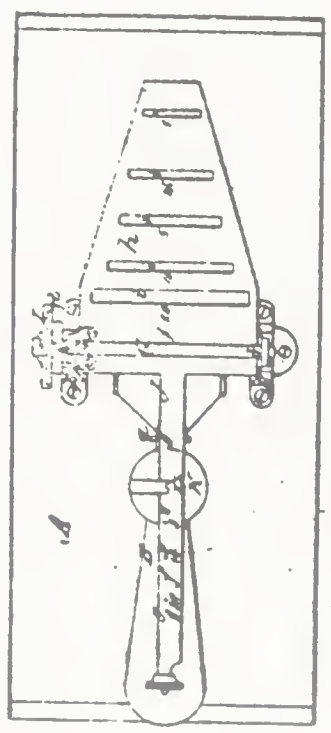


Fig 3.



UNITED STATES PATENT OFFICE.

FERDINAND J. HERPERS, OF NEWARK, NEW JERSEY.

BALANCE FOR DETECTING COUNTERFEIT MONEY.

Specification of Letters Patent No. 18,973, dated December 29, 1857.

To all whom it may concern:

Be it known that I, F. J. HERPERS, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Implement or Device for Detecting Counterfeit Gold Coin; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1. is a longitudinal vertical section of my improvement, *x*, *x*, Fig. 2, showing the plane of section. Fig. 2. is a transverse vertical section of ditto, *y*, *y*, Fig. 1, showing the plane of section. Fig. 3, is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists of a new article of manufacture, viz., a coin balance, constructed substantially as hereinafter described.

To enable others skilled in the art to make and use my invention I will proceed to describe it.

A, represents the base of the implement, and B, B, are two uprights attached to the base.

C, C, represent two vertical rods which are placed at the inner sides of the uprights B, B, one to each. The lower ends of these rods are connected to the ends of a horizontal rod D, which is attached to the inner end of a lever E, said lever being pivoted at *a*, to the base A, and having a spring F, underneath it, the spring keeping the outer end of the lever elevated, and consequently the inner end depressed.

To the upper ends of the rods C, C, rectangular blocks *b*, *b*, are attached. These blocks *b*, fit in the uprights B, B, which are constructed of metal and bent or formed of three sides so as to serve as guides for the blocks—see Figs. 1 and 3. The blocks *b*, *b*, are also constructed of metal and have each a triangular opening or bearing *c*, made through them to receive the ends of a bar G, which are made in triangular or knife-edged form, similar to the pivots of all scale beams. To one end of the bar G, an index H, is attached and a vertical bar I, is suspended to said bar near the index H, the lower end of the bar I, being heavier than its upper part so that it will be retained in a vertical position, and the upper end of said bar having a segment *d*, attached to it with a vertical mark *e*, made at its center—see Fig. 1.

To the bar G, the scale beam J, is attached. One end or part, *f*, of this scale beam is gradnated or has small holes *g*, made in it to receive the point of a weight K, said holes being made in the beam at proper points and numbered corresponding to the different denominations of U. S. gold coin, see Fig. 3. The opposite end of the scale beam is formed of a plate *h*, having slots *i*, made in it, said slots corresponding in length and width to the several U. S. gold coins, see Fig. 3. To the under side of the plate *h*, a vertical plate *j*, is attached, said plate being slotted vertically, the vertical slots corresponding in width to the slots *i*, and being in line with them, see Fig. 1.

The knife-edged ends of the bar G, fit in V-shaped notches *k*, in the upper ends of the uprights B, B, when the implement is not in use—the ends of the bar being kept in the notches *k*, by the spring F. By this means the bearings and knife edges of the bar G, are kept in order or prevented from being injured by unnecessary wear.

The implement is used as follows. Suppose a $2½ gold piece is to be tested. The coin is placed in the slot marked 2½ in the plate *h*, said coin also fitting in the slot in the plate *j*, directly in line with the slot in the plate *h*. If the coin fits snugly in these slots it is of proper dimensions. The outer end of the lever E, is then depressed and the blocks *b*, are elevated so that the bearings *c*, are raised above the upper ends of the uprights B, B, and the ends of the bar G raised above or out of the notches *k*, in the upper ends of the uprights B, B. The scale beam J, then rests in the bearings *c*, and the point of the weight K, being placed in the point marked 2½ on the end or part *f*, of the scale beam, the coin will more than counterbalance the weight and the index H, will be moved to the right of the mark *e*, on the segment *d*, and the coin is proved to be genuine.

Counterfeit coin, if of the same size as the genuine ones, are necessarily lighter, because the alloy is of less specific gravity than gold. If a spurious coin be of the same weight as a genuine one, the spurious coin

will necessarily be larger, consequently by measuring and weighing the coin spurious ones may be readily detected.

I have graduated the scale beam so that new genuine coins will more than counterbalance the weight K, in order to allow for a deficiency in weight occasioned by wear, but the wear will never be so great as to prevent genuine coins from exactly balancing the weight and causing the index to be at the point *e*, on the segment. If a coin be not sufficiently heavy to do this, it is spurious.

I have practically tested the above described machine as follows: I took two pieces of gold, one being 21¾ carats U. S. standard, and the other 18 carats. These two pieces I worked into wires exactly of the same thickness. The piece of 21¾ carats. I made of the same weight as a half-eagle or $5 gold piece. The piece of 18 carats wire was then cut so as to correspond exactly in size with the wire of 21¾ carats. I then weighed the two pieces of wire and found the wire of 18 carats to be 18 grains lighter than the one of 21¾ carats, thereby showing a difference of 3¾ grains on the dollar. If, therefore, an allowance of one grain on the dollar be made for the wear of gold coin, to which extent it probably will not wear, as only the projecting surfaces are exposed, the implement will detect base coin made of as good a quality or of as fine gold as profit would permit.

I am aware that there is in some coins a small difference in size owing to the different degrees of pressure given it by coining, but this difference is so minute, and the difference between the genuine coin and 18-carat gold so great, being (after a deduction of one grain on the dollar for wear) 2¾ grains, that a well constructed implement will detect any base coin. The accuracy, therefore, of an implement for the purpose of detecting base coin is important, and by having the implement constructed or arranged as shown so that the beam is not allowed to rest in its bearings when not in use, the bearings are kept in perfect order, being subjected to wear only when the implement is used.

I am aware that implements have been previously invented for effecting the same purpose as the one herein described. I therefore do not claim detecting spurious coin by weight and measurement irrespective of the construction of the implement as described, but to the best of my knowledge and belief, it is new in balances of this description to arrange the knife edges as herein described, so that the knife edges can only come in contact with their bearings at the moment of weighing.

I do not claim to be the inventor of sliding or movable supports for the knife edges, as this feature is seen in jewelers' scales, apothecaries' scales, etc. But in all of these, it will be found that the knife edges rest upon their bearings when the scales are not in use. Consequently every concussion or jarring in the apartment or building injures the knife edges and bearings, and after a time the scales become inaccurate. This can never happen in my improvement, because the knife edges never come in contact with their bearings, except when the lever is pressed, and they wholly separate and are held steadily apart when the lever is released. It is also new to have vertical pockets of the exact size of the coins, upon the fulcrum bar, which pockets serve as measures of the dimensions of the pieces of money, and also indicate the exact spot where the coin is to be placed by the operator. I do not, however, claim, broadly, the placing of gages or receptacles upon balances. But no balances have ever been arranged with a number of vertical pockets in close proximity. The apparatus is thus made very compact and highly convenient.

I do not claim to be the inventor of swinging index bars for weighing machines; and therefore I disclaim the same as used in my apparatus. Their employment is not essential as my instrument can be made and used either with or without the same, as may be desired.

No coin balance like mine has ever been known or used, to the best of my knowledge and belief. It is therefore a new article of manufacture, and possesses useful qualities not seen in any other analogous article.

I claim and desire to secure by Letters Patent, as a new article of manufacture,—

A coin balance when constructed as herein described.

FERDINAND J. HERPERS.

Witnesses:

JAMES F. BUCKLEY,

W. TUSCH.

No. 645,185. Patented Mar. 13, 1900.

T. I. PORTER.

COIN DETECTOR.

(Application filed Aug. 17, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

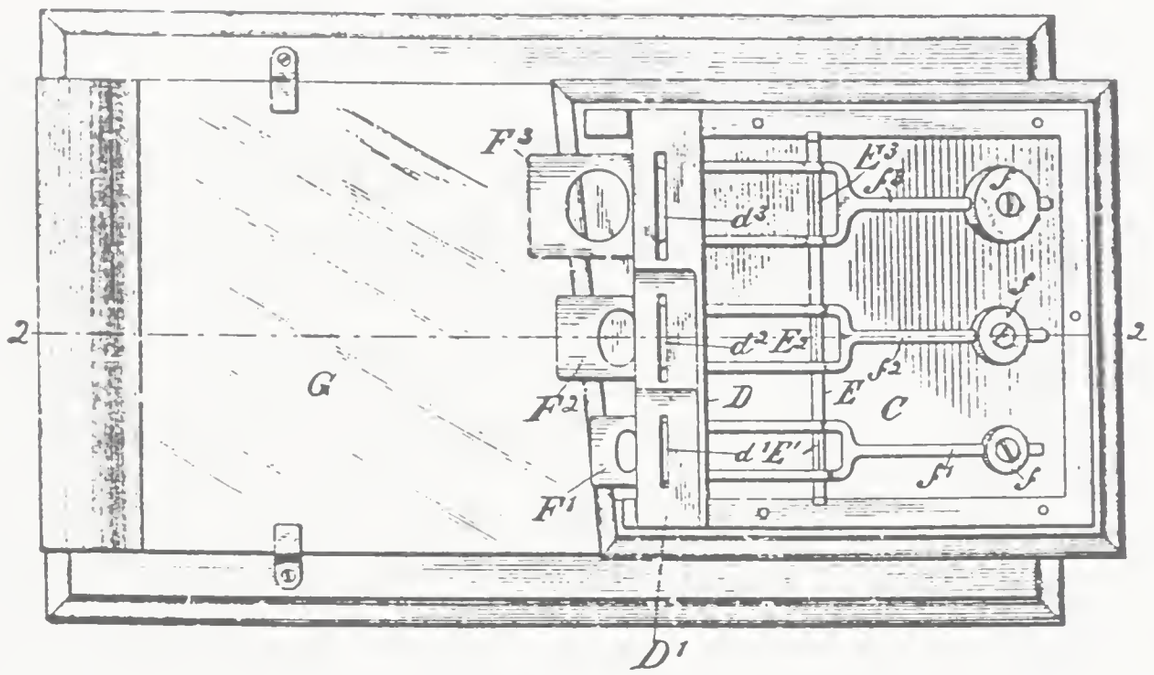
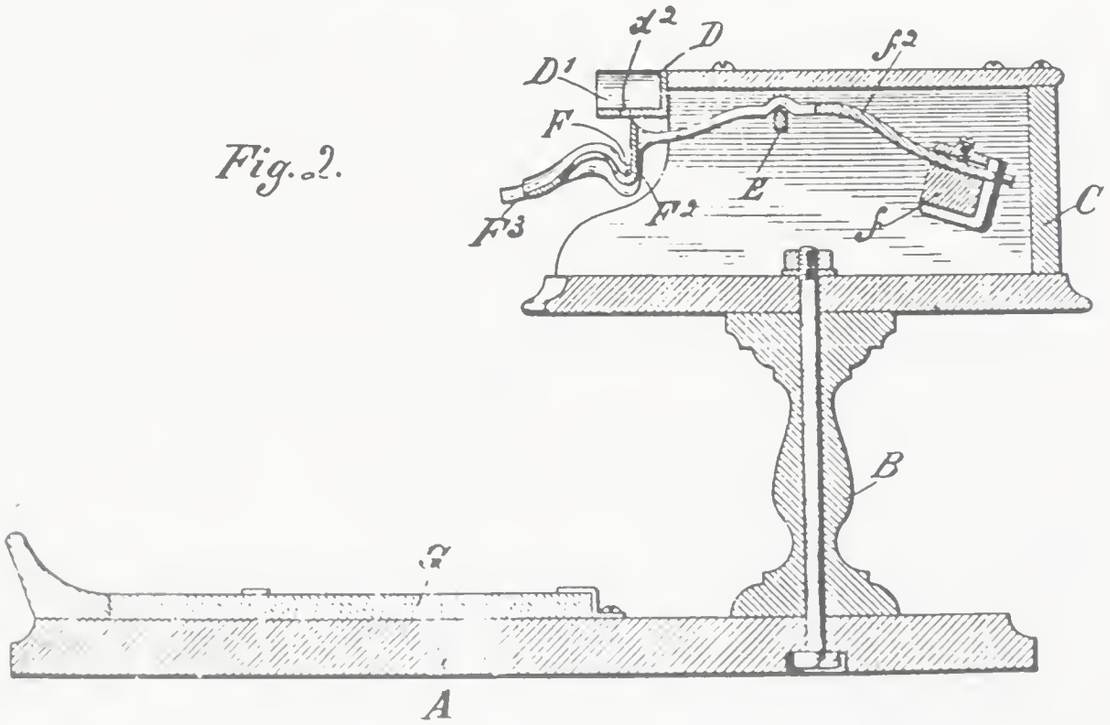


Fig. 2.



Witnesses:
W. C. Curtis
W. H. Colton.

Inventor:
Thomas I. Porter
By Emery & Hopkins
Attys.

No. 645,185. Patented Mar. 13, 1900.

T. I. PORTER.

COIN DETECTOR.

(Application filed Aug. 17, 1899.)

(No Model.) 2 Sheets—Sheet 2

Fig. 3.

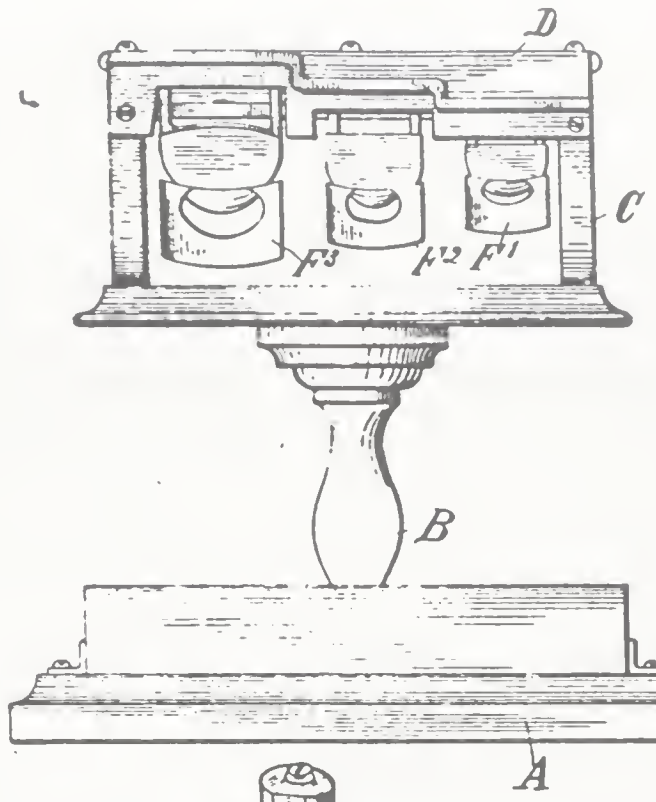
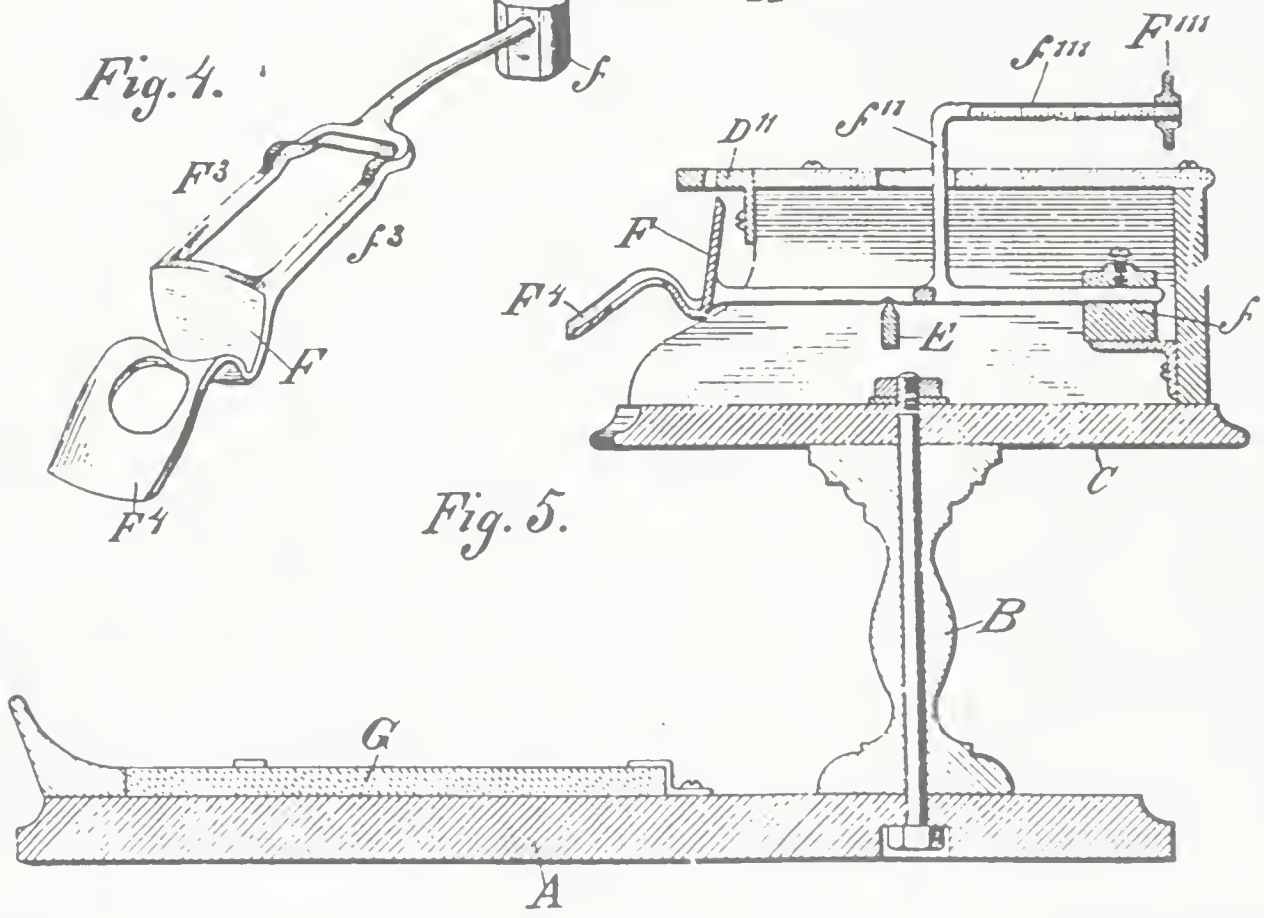


Fig. 4.

Fig. 5.



Witnesses:
H. C. Coolidge
W. H. Colton.

Inventor:
Thomas I. Porter
By Smiley & Hopkins
Attys.

UNITED STATES PATENT OFFICE.

THOMAS I. PORTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE RAND, McNALLY & COMPANY, OF SAME PLACE.

COIN-DETECTOR.

SPECIFICATION forming part of Letters Patent No. 645,185, dated March 13, 1900

Application filed August 17, 1899. Serial No. 727,500. (No model.)

To all whom it may concern:

Be it known that I, THOMAS I. PORTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Detectors, of which the following is a specification.

The object of the present invention is to provide a simple and efficient device for quickly testing coin as to size, weight, and ring with a view to detecting counterfeits. In carrying out this object, for testing the size of the coin a slot is used, and this slot is disposed immediately above a balance and in such relation thereto that as the coin leaves the slot by which its size is tested it passes immediately to the balance, by which it is tested as to its weight. The balance has a depressible coin-rest, and the depression of this rest is resisted by a force a trifle less than the correct weight of the coin to be tested, so that when a coin of the proper weight is delivered to the coin-rest the latter will be depressed, albeit it will not respond to a coin of insufficient weight. As the rest is depressed by the weight of the coin it discharges the coin by tipping it over sidewise onto a sounding board or table, by which its ring is tested, the rest being provided with an extension by which the coin is flipped or turned in order to insure its striking on one of its flat faces. With this arrangement in order to make the three tests it is simply necessary to insert the coin in the appropriate slot of the machine, and if it is genuine it will pass in rapid succession from one test to the next until the three are completed. The machine is provided with a slot and balance for each denomination of coin that is to be tested.

With silver coin it is seldom desired to ascertain the exact weight in case the test shows it to be light, whether it is or is not light being in most cases all that it is desired to know; but in the case of gold coin it is sometimes desirable when a light coin is found to ascertain exactly what its weight is. To this end the balance in the preferred form of the invention is provided with a graduated arm, which has a weight mounted adjustably thereon, so that the exact weight of the coin or its deficiency may be determined.

The invention consists in the features of novelty that are hereinafter fully described with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a plan view of a coin-detector embodying some features of the invention, the specific embodiment here shown being a detector designed more especially for silver coin. Fig. 2 is a vertical section thereof on the line 2 2, Fig. 1. Fig. 3 is a front view thereof with all of the coin-rests of the balances depressed. Fig. 4 is a perspective view of one of the balances. Fig. 5 is a vertical section of a coin-detector embodying the invention in what is hereby elected as the preferred form of the invention for the purposes of this application.

A represents a base, from which rises a standard B, surmounted by a box C, the top of which is omitted from Fig. 1 in order to show the balances. Secured to the front of the box and crossing it from side to side is a plate D, having a horizontal flange D′ stepped or offset vertically, each step or offset being provided with a slot of the size appropriate for measuring a coin of a given denomination, said slots being designated d', d^2, and d^3, respectively. Crossing the box in the rear of the plate D is a fulcrum-bar E, having knife-edge bearings E′, E², and E³, upon which the beams f' f^2 f^3 of three balances F′ F² F³ are mounted to oscillate. Each of these balances comprises a beam, (f', f^2, or f^3, as the case may be,) a weight f, carried by the beam on one side of the fulcrum, and a coin-rest F, carried by the beam on the other side of the fulcrum. The coin-rest is so constructed that when in its initial position it supports the coin on edge and in a plane which is parallel with the axis of oscillation of the balance, and when depressed it dumps the coin off sidewise as distinguished from allowing it to roll out edgewise. To these ends the coin-rest has a seat for the coin, the general direction of which is parallel with the axis of oscillation and which is curved to conform more or less exactly to the periphery of the coin, a high rear wall which serves to support the coin on edge, and a front wall which slopes toward the seat for the purpose of guiding each coin to exactly the same place thereon

and which is low in order to allow the coin to tumble over it when the center of gravity of the coin passes the vertical plane of the seat. The coin-rest of each balance is disposed directly beneath one of the slots, and the distance between the bottom of any given coin-rest and that portion of the flange D' through which the corresponding slot is made is a trifle less than the diameter of a coin of the denomination appropriate to the slot and rest in question. This being so, should a coin being tested be too light it will not depress the rest, and the engagement of the coin with the flange D' will prevent the coin from falling out of the rest. On the other hand, if the coin undergoing test is of proper weight it will depress the rest, and as soon as its upper margin escapes from engagement with the flange D' the coin will fall forward onto a sounding board or table G, which preferably consists of a glass slab. It is not, however, essential to use a separate slab as a sounding-board; but, on the contrary, if desired, the base A may be used for the purpose. In this connection A may be considered as representing either a base forming a part of the apparatus or the top of a desk, table, or counter on which the apparatus is mounted.

In order to cause the coin to fall on one of its flat faces, each of the coin-rests is provided with an extension which forms a continuation of the front wall of the rest and is curved on its top side, the extensions of the several rests being indicated by the letter F^4.

As before stated, it is seldom desired to ascertain the exact weight of a light silver coin, and hence for testing silver coin a machine constructed as above described will answer every purpose; but for gold coin more exactness is required, and it is sometimes desirable to ascertain the exact weight of the coin or the exact amount of its deficiency. To these ends it is necessary to prevent the frictional contact of the coin with the sides of the slot or with any other part of the machine while the coin is being weighed, (otherwise the result indicated by the weighing apparatus will be inaccurate to the extent of the friction,) and it is necessary to provide the balance with an adjustable weight. In order to prevent frictional contact of the coin with any part that would prevent its being accurately weighed, the coin-rest is preferably made, as shown in Fig. 5, with a rear wall that inclines slightly from the vertical, (the rest being in other respects as already described with reference to the preceding figures,) so that in the initial condition of the balance the coin will keep its place on the rest without support from any other part, and, in fact, will not leave it until the end of the beam carrying the rest has been depressed sufficiently to throw the center of gravity of the coin past the vertical line drawn through its supporting-point on the rest.

In the form of the invention shown in Fig. 5 the slots for receiving the coin are made through a plate D'', which is without offsets. The top of this box is provided also with an opening, through which extends an arm f'', rising from the beam of the balance and having a laterally-projecting branch f''', on which a weight F''' is adjustably mounted, the arm f''' being provided with appropriate graduations or a scale for indicating the weight or the deficiency in the weight of the coin. In this form of the invention the coin during the test for weight is without contact with any part of the machine excepting the coin-rest itself, and therefore friction is entirely eliminated. If the coin is of the proper weight, the balance, as in the case of the testing-machine shown in Figs. 1 to 4, inclusive, will respond to the weight of the coin and the coin will be dumped onto the sounding-board. On the other hand, if the coin be of insufficient weight the balance will not respond, and thereafter the exact weight or the exact insufficiency in the weight (depending upon the character of the scale on the branch f''' of the arm f'') may be ascertained by adjusting the weight F''' until the coin balances. Otherwise the machine shown in Fig. 5 is practically the same as that shown in Figs. 1 to 4, inclusive.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, and a weight carried by the beam on the other side of the fulcrum and adapted to prevent the depression of the rest by a coin of insufficient weight while permitting its depression by a coin of proper weight, said coin-rest having means for supporting the coin on edge in a substantially-vertical plane parallel with the axis of oscillation of the beam, means for preventing the coin from rolling off of the side of the beam, and means for discharging the coin sidewise at the end of the beam when the coin-rest is depressed, substantially as set forth.

2. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, and means for preventing the depression of the rest by a coin of insufficient weight, said rest having a seat for the coin disposed substantially parallel with the axis of oscillation, a rear wall for supporting the coin on edge, and a low front wall over which the coin falls sidewise when the rest is depressed, substantially as set forth.

3. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, and means for preventing the depression of the rest by a coin of insufficient weight, said rest having a seat curved to conform to the periphery of the coin and dis-

posed substantially parallel with the axis of oscillation, a substantially-vertical rear wall adapted to support the coin on edge in a substantially-vertical plane parallel with the axis of oscillation, and a low front wall sloping toward the seat, substantially as set forth.

4. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, means for preventing the depression of the rest by a coin of insufficient weight, said rest having means for supporting the coin on edge and in a plane parallel with the axis of oscillation, while the rest is in initial position, and means for discharging the coin sidewise when the rest is depressed, a sounding-board arranged to receive the coin after it is discharged, and means carried by the rest for flipping the coin, substantially as set forth.

5. In a coin-detector, the combination of a beam, a fulcrum therefor, a depressible coin-rest carried by the beam on one side of the fulcrum, said rest having a seat for the coin disposed substantially parallel with the axis of oscillation of the beam, a rear wall for supporting the coin on edge, and a low front wall sloping toward the seat, a sounding-board adapted to receive the coin as it falls, and a curved projection forming an extension of the front wall of the rest, substantially as set forth.

THOMAS I. PORTER.

Witnesses:
L. M. HOPKINS,
BERTHA C. SIMS.

No. 867,304. PATENTED OCT. 1, 1907.

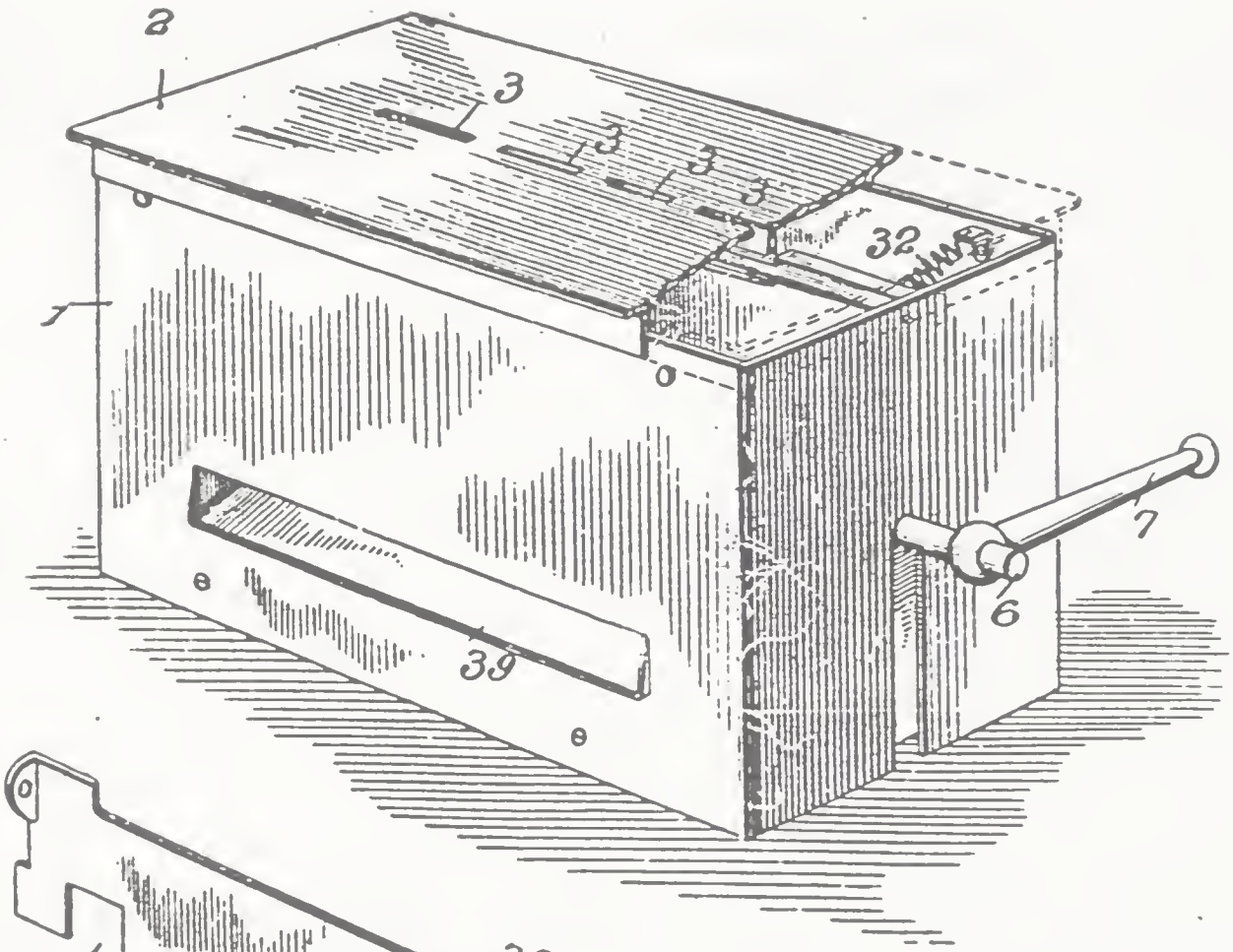
M. D. SADTLER.

COIN TESTING MACHINE.

APPLICATION FILED JUNE 22, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



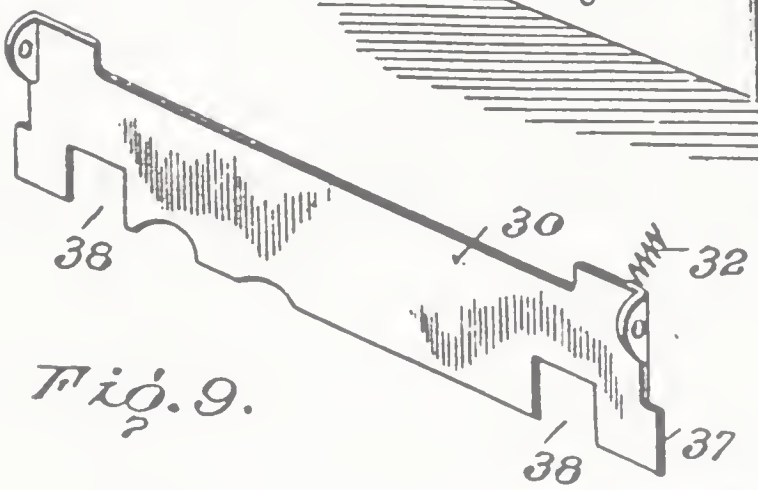


Fig. 9.

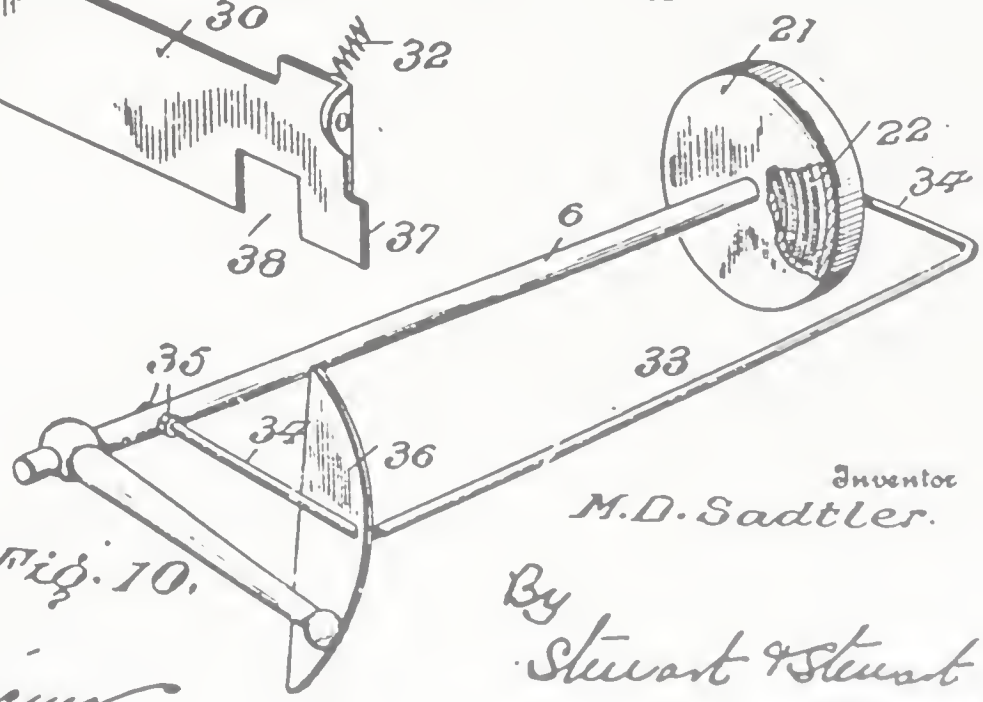


Fig. 10.

Witnesses
Jno. Imrie.
A. B. Williams

Inventor
M. D. Sadtler.
By Stewart & Stewart
Attorneys

THE HARRIS PETERS CO., WASHINGTON, D. C.

No. 867,304. PATENTED OCT. 1, 1907.

M. D. SADTLER.

COIN TESTING MACHINE.

APPLICATION FILED JUNE 22, 1906.

3 SHEETS—SHEET 2.

Fig. 2.

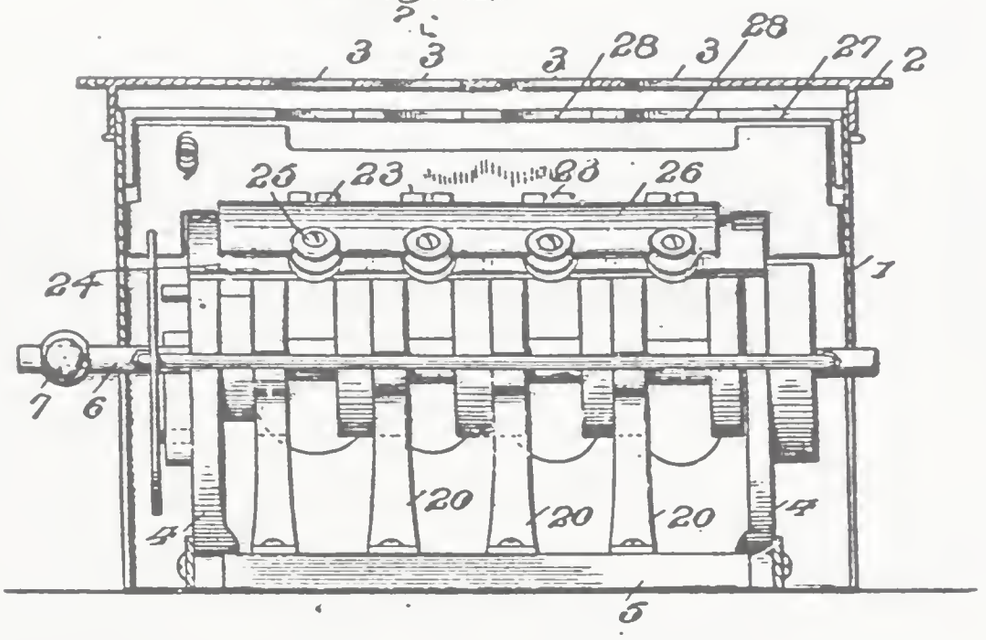


Fig. 3.

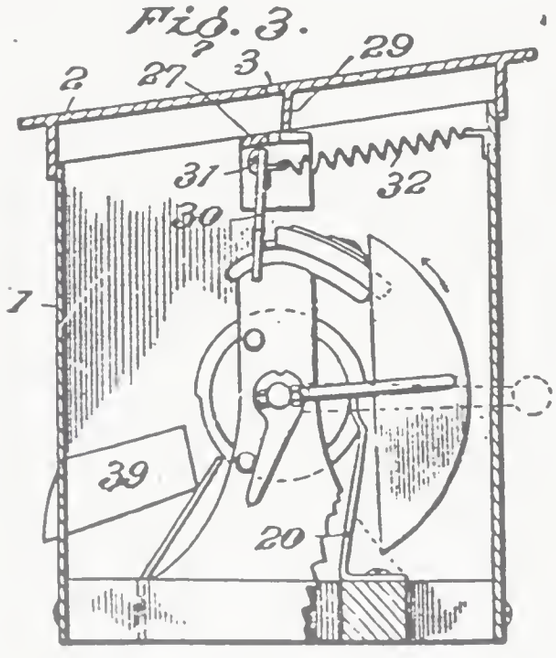
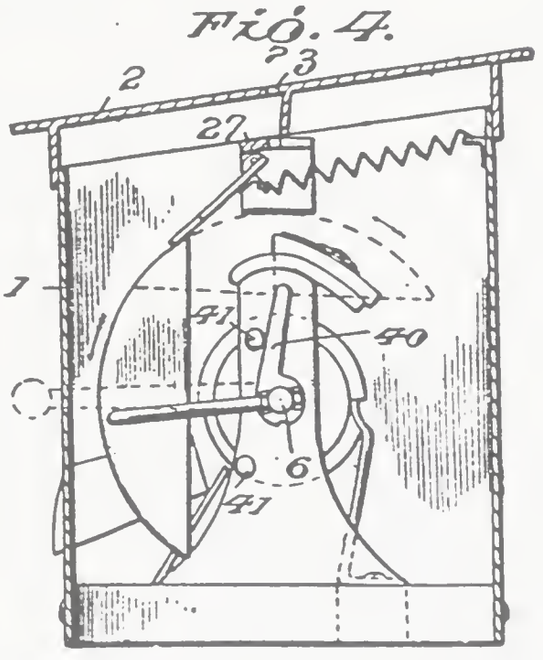


Fig. 4.



Inventor

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Witnesses

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A. B. Williamson

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Attorneys

THE GEORGE PETERS CO., WASHINGTON, D. C.

No. 867,304. PATENTED OCT. 1, 1907.

M. D. SADTLER.

COIN TESTING MACHINE.

APPLICATION FILED JUNE 22, 1906.

3 SHEETS—SHEET 3.

Fig. 5.

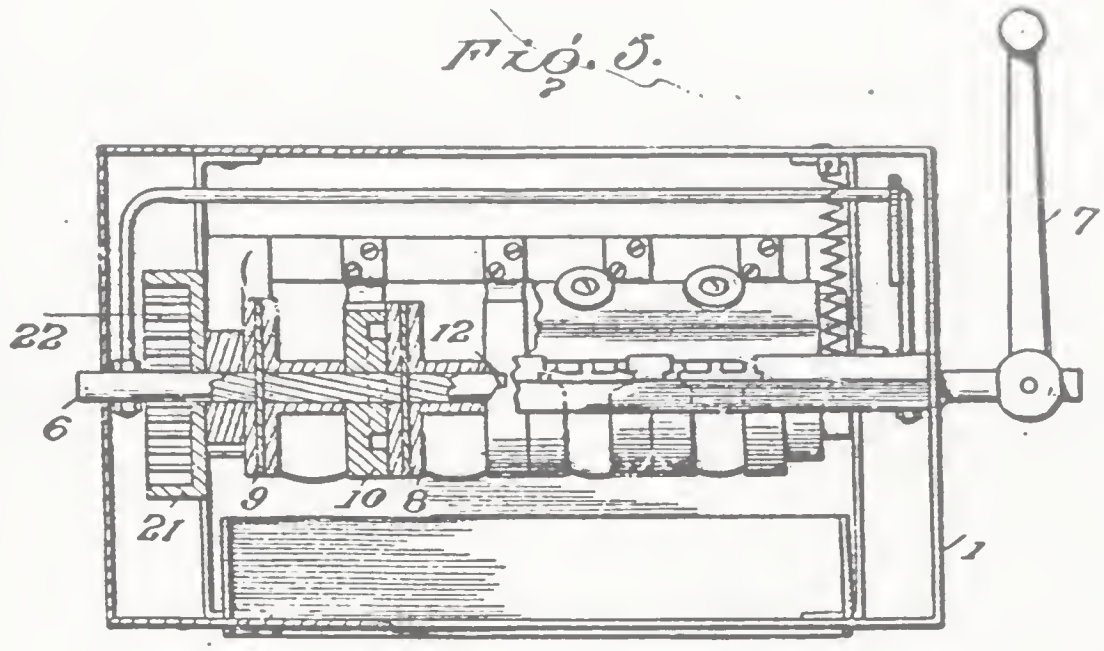


Fig. 6.

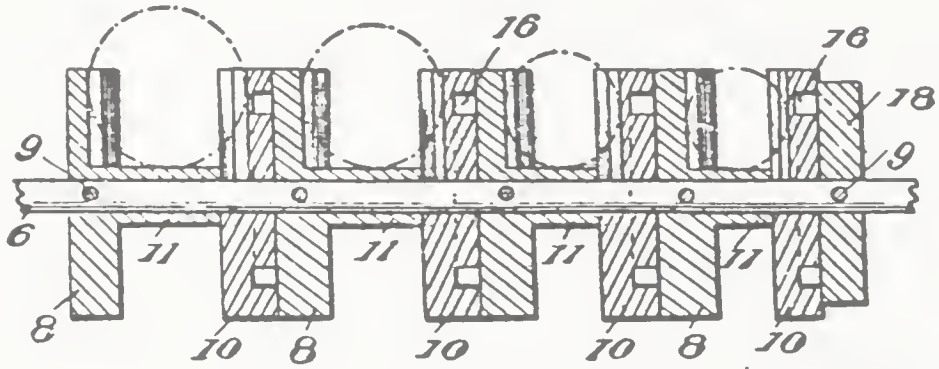


Fig. 7.

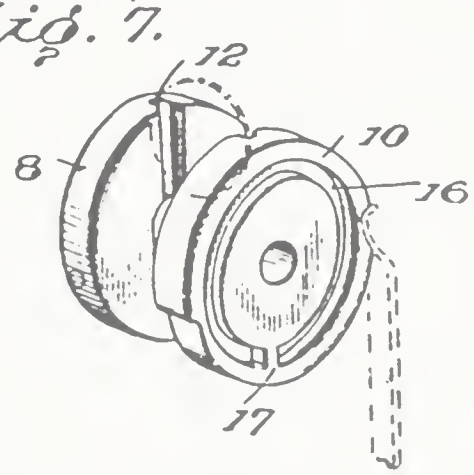
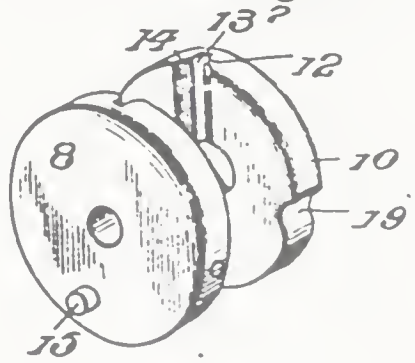


Fig. 8.



Witnesses:
Jno. Imirie
A. B. Williams

Inventor
M. D. Sadtler.

By Stewart & Stewart
Attorneys

UNITED STATES PATENT OFFICE.

MORGAN D. SADTLER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO JESSE B. FORRESTER, OF BALTIMORE, MARYLAND.

COIN-TESTING MACHINE.

No. 867,304. Specification of Letters Patent. Patented Oct. 1, 1907.

Application filed June 22, 1906. Serial No. 322,904.

To all whom it may concern:

Be it known that I, MORGAN D. SADTLER, a citizen of the United States of America, and a resident of Baltimore city and State of Maryland, have invented certain new and useful Improvements in Coin-Testing Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in coin testers adapted to be used in connection with coin controlled machines of all types.

The object of my invention is to provide a mechanism which will test each coin dropped into the machine and if it is attempted to operate the machine by what is commonly called a slug, the mechanism will throw out the slug, though it is of the proper size, diameter, thickness and weight.

My invention tests each coin presented to the machine and unless the coin is of the proper size, diameter, thickness and made of the proper metal, the tester will not pass the coin in a manner to operate the coin actuating mechanism to which the tester is applied.

In the form of my invention shown, the tester is adapted to test various denominations of coins. It is to be understood, however, that the number of denominations which can be tested may be varied as desired.

Referring to the drawings, wherein I show one embodiment of my invention for the purpose of illustrating the same and wherein the same part is designated by the same reference numeral wherever it occurs, Figure 1 is a perspective view of a coin tester adapted to be applied to any suitable form of coin controlled mechanism, the top of the case being partly broken away. Fig. 2 is a longitudinal section of the case showing the testing mechanism in side elevation. Fig. 3 is an end view showing the case in section and operating parts in elevation and in their normal position. Fig. 4 is a view similar to Fig. 3 showing the parts in the position they occupy at the limit of movement of the mechanism during the testing operation. Fig. 5 is a top plan view partly in section of the device with the cover removed. Fig. 6 is a central longitudinal section of the testing disks, the shaft on which they are mounted being shown in elevation. Fig. 7 is a detail perspective view of a pair of disks removed from the shaft. Fig. 8 is a view similar to Fig. 7 showing the other side of a pair of disks. Fig. 9 is a detail view of the hinged member of the coin guide. Fig. 10 is a detail perspective view of the shaft on which the disks are mounted and connected thereto, the disks not being shown on the shaft.

1 designates a rectangular case provided with a cover 2 having slots 3 formed therein for the insertion of coins.

4—4 designate a pair of side frames which are secured to a base 5, these side frames preferably and as shown, are provided with means by which the case 1 may be secured thereto to inclose the testing mechanism.

6 designates a shaft journaled in bearings in said frames 4 and provided at the end with a handle 7 which is located outside the casing 1.

8 designate a series of disks mounted on the shaft 6, the disks being secured to the shaft by any suitable means, as for instance, the pins 9.

10 designate a second series of disks which are loosely mounted on the shaft.

11 are spacing sleeves which, preferably and as shown, are formed integral with the disks 8 and hold the disks 10 spaced a proper distance away from the face of the disks 8. Each of these disks 8 and 10 is provided with a slot 12, the slot being formed radially of the disk, the walls of the slot at the bottom 13 and for about half the distance to the face of each disk being parallel, the walls then being beveled outwardly as at 14, whereby a slot of a substantially Y-shaped cross-section is formed, as is best seen in Fig. 7 and 8. The disks are assembled on the shaft so that a fast disk and a loose disk alternate. The hub 11 extends from the side of the disk 8 which is provided with the slot 12. The slot of the loose disk 10 which is separated from the fast disk 8 by spacing sleeve or hub 11, faces the slot in the fast disk whereby the disks form by their slots a pair of jaws adapted to receive a coin, the length of the hubs 11 determine the size of coin which each pair of jaws is adapted to receive.

The pair of jaws are preferably and as shown, assembled on the shaft so that the fast and loose disks of adjacent pairs of jaws are in contact whereby the loose jaws are held from endwise movement on the shaft. On the face of each of the fast jaws opposite that containing the slot, I preferably provide a pin 15 adapted to engage a concentric groove 16 formed in the adjacent face of the loose disk.

17 is a stop formed in the groove 16 with which the pin 15 is adapted to contact, whereby the disk 10 will be caused to rotate with the fast disk 8 when the pin and stop are in contact. The pin 15 and the stop 17 in the slot 16 are so located with respect to each other that when each of the fixed jaws is in normal position, the loose jaws will be held in their normal position by contact between the pin 15 and the stop 17.

18 is a disk mounted on the end of the shaft adjacent the end loose disk and secured to the shaft by a pin 9 the same as the fast disks 8. The disk 18 is provided with a pin 15 adapted to engage with the stop 17 in the groove 16 of the adjacent loose disk, whereby this loose disk will be caused to turn to its normal position by the pin engaging the stop in the same manner as the other loose disks.

19 are notches cut in the side of each of the loose

disks with which the free end of springs 20 are adapted to engage. The springs 20 are secured at their base to the frame 5 and they are so positioned that their free ends will engage the notches in the loose disks to hold the loose disks in their normal position in line with the slots of the fast disks when they are in normal position, as shown in Figs. 5 and 6. These springs also act to produce a sufficient resistance to the rotation of the loose disks as to cause the pairs of disks to bend a coin held between them which is of less hardness than standard, because the loose disks will not be moved unless the coin or token is of the hardness of the standard coin.

21 is a flanged disk which is secured to one side of the side frames 4 and through which the shaft 6 loosely passes. To the inside of the flange of this disk is secured one end of a clock spring 22, the other end of the clock spring being secured to the shaft 6 whereby the spring will operate to return the parts to their normal position as soon as the handle is released after the operation of the machine.

In order to prevent slugs formed of iron, such as washers and the like, from being fed into the machine, which might operate the machine, if they were of the proper size to accurately fit the slot in a pair of disks and of the proper thickness to be positioned in the slots, due to the fact that they are so hard that they would not be bent under the twisting action of the pair of jaws, I mount a series of magnets 23 on a plate 24 extending between the side frames 4 and over the disks. These magnets 23 are shown as secured to the plate 24 by means of the screw 25, one magnet being arranged over each pair of jaws.

26 is a plate covering all of the magnets except their ends and held in position by means of the screws 25. The magnets are shown as being horse-shoe magnets and the ends of the horse-shoes are so located as to be adjacent the path of the coin from the coin slots 3 to the slots in the disks, as is best shown in Fig. 5. From this, it will be seen that should an iron washer or similar slug be inserted in the machine, it will be stopped by the magnets and held, thus, preventing such slug from entering the machine.

27 designates a frame which extends from one end of the case to the other and is located near the top of the case. This frame is provided with coin slots 28 which register with the slots 3 in the top of the case.

29 is a guiding flange which extends downward from the top 2 adjacent the slots 3 on to the top of the frame 27 beside the coin slots 28 whereby a coin dropped in the slots 3 is guided from the slots 28.

30 is a plate which forms a pivoted coin guide, it being pivoted at 31 to the ends of the frame 27. This plate is adapted to guide the coin after it passes through the slots 28 down into the slots of the disks.

32 is a spring one end of which is connected to the guide plate 31 and the other to the side of the casing whereby the plate is held normally in position to guide the coin in its proper path. The lower end of this plate extends down close to the periphery of the disks and, preferably, the coin slots in the disks are of such a depth that a portion of the coins project beyond the periphery of the disks when they are in position. It is therefore, necessary to move this plate out of the path of the coins when the disks are rotated to test the same. It is to permit of this movement that the guide is hinged.

33 designates a rod which is formed of a main portion of sufficient length to extend from one end of the shaft 6 to nearly the other and is secured to the shaft out side of the side frames 4. The ends 34 of the rod 33 are bent inwardly at right angles and preferably and as shown, pass through openings in the shaft and are engaged in position by means of the nuts 35. The ends 34 of the rod are of such a length that its main portion 33 will pass over the tops of the magnets and close thereto in order to knock off the magnets any slugs which may be held thereon, by the magnetic attraction.

36 is a wing cam mounted on the rod 33 at a corner and this wing cam is adapted to engage a projecting end portion 37 of the hinged guide 30. The hinged guide being of sufficient length to extend outside the side frame and is provided with slots 38 whereby the guide may straddle said side frames. From this, it will be seen that the wing cam 36 will move the guide out of the path of the coin held between the disks in the testing operation and will also move the guide out from in front of the magnets so that the rod 33 can remove a slug held by the magnets.

39 is a chute extending from the casing 1 and located in such a position as to catch any slug knocked off the magnet or a slug which is bent in the operation of the testing jaws.

40 is an arm mounted on the shaft 6 and adapted to contact with the stops 41 mounted on the side frame, whereby the revolution of the shaft on the operation of the handle in one direction and spring in another, is limited to a half revolution. The arm on the shaft is so positioned in relation to the stop that when it is against the lower stop in its normal position and held there against by the spring, the slots in the disks will be direct under the coin slots in the cover so any coin dropped through the slot in the cover will fall into the corresponding slot in the pair of disks.

In the operation of my device, the parts being in their normal position, a token may be dropped through the proper coin slot 3 and will pass down through the corresponding slot 28 and will be guided by the movable guide 30 adjacent to the end of one of the magnets 23. If the token is not composed of iron, it will pass by the magnet without being attracted. If, however, it is of iron, it will be caught by the magnet and held with the upper edge of the token extending above the upper surface of the plate 26. If, however, the magnets do not stop the token, then it drops down into the slots in the disks 8 and 10. When now, the handle 7 of the shaft is turned, all of the fast disks 8 turn therewith and if the token is of the proper hardness, it will be sufficient to cause the loose disk of the pair engaging the token to move with the fast disk against the tension of the spring 20 and the two disks will be revolved together carrying the token between them. This rotation will continue until the arm 40 engages the upper pin 41 when the parts will be in the position shown in Fig. 4. The striking of the arm 40 against the pin 41 will cause the coin to be released and dropped out of the tester, down into the bottom of the device where it may pass on to any suitable coin controlled mechanism. If, however, the token is not of standard hard-

ness, then when the shaft is turned, the spring 20 will offer sufficient resistance to the rotation of the loose disk to cause the token to be twisted out of the grip of the slots in the disks and the token will fall on to the chute 39 and will be delivered out of the testing machine without the loose disk turning.

The stop 17 in the peripheral slot 16 of the loose disk is so located with respect to the pin 15 on the adjacent fast disk that the fast disk can turn forward without moving the loose disk. If, however, the loose disk is moved by a token of proper hardness, then it will be carried around and the pin 15 and stop 17 will be in such relation that upon the return movement of the shaft, the pin 15 will immediately engage the stop and return the loose disk to its normal position, ready to receive the next token. As soon as it has been returned, the end of the spring 20 engaging the notch 19, will hold the same in position to receive the next token.

While I have described what I believe to be the preferred form of my invention, I desire to have it understood that many changes may be made in the form, construction and arrangement of parts, and other elements may be substituted for those here shown and described, for the purpose of carrying out the function of the elements therein shown and described, without departing from the spirit of my invention, and that wherein I use the term "means", this term is to be understood as covering all forms of mechanism which are capable of performing the function ascribed to the term in the claims.

What I claim as new and desire to secure by Letters Patent is:—

1. In a coin testing machine, the combination with a plurality of pairs of jaws, each pair being adapted to hold a coin between them, of means for subjecting one jaw of each pair to a resistance sufficient to bend anything of less hardness than the coin to be tested and means for moving all the jaws not subject to tension simultaneously whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

2. In a coin testing machine, the combination with a plurality of pairs of jaws, each pair of jaws being provided with slots in their adjacent faces adapted to receive a coin between them, of means for subjecting one of each pairs of jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested and means for turning all the jaws not subject to tension simultaneously, whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

3. In a coin testing machine, the combination with a shaft, of a pair of jaws spaced apart and mounted on said shaft, one of said jaws being fast on said shaft and the other being loosely mounted thereon, means for subjecting the jaw which is loose on said shaft to a resistance sufficient to bend anything of less hardness than the coin to be tested and means whereby the shaft may be rotated whereby a coin or token held between the jaws will either move the jaw subject to tension or be bent.

4. In a coin testing machine, the combination with a shaft, of a plurality of pairs of jaws mounted on the shaft, one of the jaws of each pair being fast on the shaft and the other loose thereon, means for subjecting the latter one of each pair of jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested and means whereby the shaft may be rotated to rotate all the jaws fast thereon whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

5. In a coin testing machine, the combination with a shaft, of a pair of jaws mounted on said shaft, one of said jaws being fast and the other loose thereon, said jaws being adapted to hold a coin between them, means for subjecting said loose jaw to a resistance sufficient to bend anything of less hardness than the coin to be tested, means whereby the shaft may be turned to rotate the jaw not subject to tension whereby the coin or token held between the jaws will either turn the jaw not subject to tension or be bent and means fast on the shaft and adjacent to the loose jaw adapted to return the jaw to its normal position after it has been moved therefrom by a coin.

6. In a coin testing machine, the combination with a shaft, of a pair of disks mounted on the shaft adapted to hold a coin in them, one of said disks being fast on the shaft, and the other loose, means for subjecting the loose disk to a resistance sufficient to bend any coin of less hardness than the coin to be tested, means whereby the shaft may be turned to turn the disk not subject to tension whereby the coin or token will either turn the jaw subject to tension or be bent, a disk mounted on the shaft adjacent to the loose disk and a connection between said last mentioned disk and the loose disk whereby the loose disk will be returned to its normal position upon the return of the shaft.

7. In a coin testing machine, the combination with a shaft, of a plurality of pairs of jaws mounted on the shaft each pair of jaws being adapted to hold a coin between them, one of each of said pairs of jaws being loose on said shaft and the other fast thereon, the loose jaw of one pair being adjacent to the fast jaw of the adjacent pair, means for subjecting the loose jaw to a resistance sufficient to bend anything of less hardness than the coin to be tested, means whereby the shaft may be rotated to rotate all the jaws fast thereon simultaneously whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent, and connections between the adjacent jaws of the adjacent pairs, whereby the fast jaw of one pair will return the loose jaw of the adjacent pair when the same has been moved from its normal position.

8. In a coin testing machine, the combination with a pair of jaws adapted to hold the coin between them, of means for subjecting one of the jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested, means for moving the jaw not subjected to tension whereby the coin or token will either move the jaw subject to tension or be bent, a movable part adapted to form a guide for the coin to the jaws and means for moving said movable part out of the path of movement of the coin in the grip of the jaws.

Signed by me at Baltimore city & State of Md. this 20th day of June 1906.

MORGAN D. SADTLER.

Witnesses:
WILLIAM W. POWELL,
JOHN EMORY CROSS.

March 31, 1925. 1,531,642

L. BRAGIN

SPURIOUS COIN DETECTOR

Filed July 6, 1923

Fig. 1.

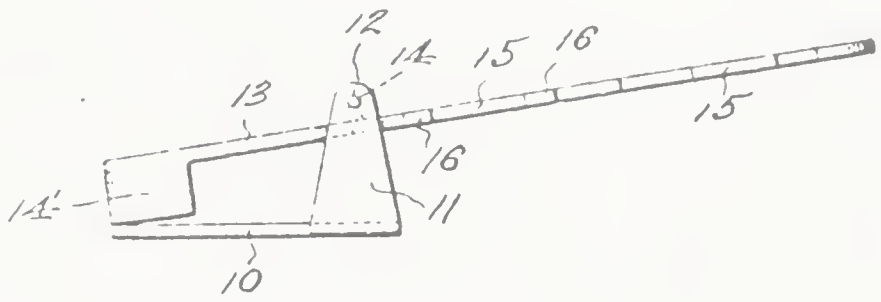


Fig. 2.

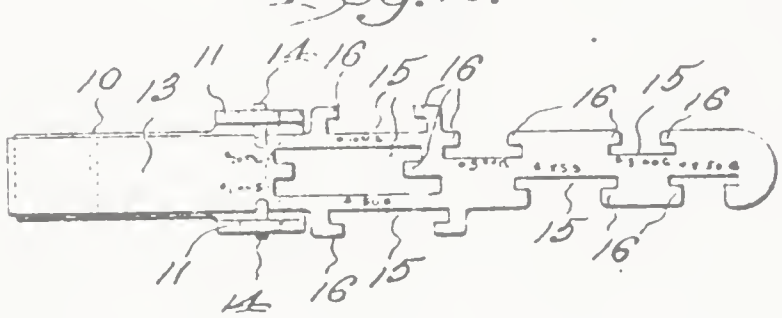


Fig. 4.

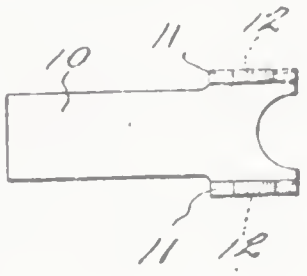
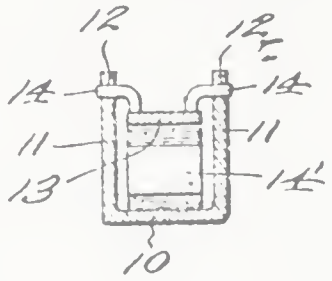


Fig. 3.



Leopold Bragin, Inventor
W. Bragin, Administrator for
the estate of Leopold Bragin, deceased,

BY Victor J. Evans

ATTORNEY

WITNESS:

Patented Mar. 31, 1925. 1,531,642

UNITED STATES PATENT OFFICE.

LEOPOLD BRAGIN, DECEASED, LATE OF BROOKLYN, NEW YORK; BY WOLF BRAGIN, ADMINISTRATOR, OF GREENWICH, CONNECTICUT.

SPURIOUS COIN DETECTOR.

Application filed July 6, 1923. Serial No. 649,942.

To all whom it may concern:

Be it known that LEOPOLD BRAGIN, deceased, late a citizen of Russia, and resident of Brooklyn, in the county of Kings and State of New York, has invented new and useful Improvements in Spurious Coin Detectors, of which the following is the specification.

This invention relates to devices for testing coins, and has for its object the provision of a novel balance device formed with holding slots designed to receive coins of different denominations, one at a time, discrepancies in the sizes of the coins being indicated by refusal of the coin to enter the slot or by its slipping through the slot, and discrepancy in the weight being indicated by too little or too great movement of the balance arm.

An important object is the provision of a device of this character which will be very simple and inexpensive in manufacture, neat in appearance, compact, efficient and durable in service and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of the device. Figure 2 is a plan view. Figure 3 is a cross section taken through the pivotal connection, and Figure 4 is a plan view of the base.

Referring more particularly to the drawings, the numeral 10 designates a base constructed of any suitable material and carrying spaced uprights 11 which may be secured thereto or formed integrally thereon, as preferred. The upper ends of the uprights are formed with bearing holes 12.

In connection with the above described base, I provide a balance arm 13 which is formed at opposite sides with pins or trunnions 14 engaged within the holes 12 so that the arm is pivoted. The shorter end of the arm has its underside weighted as indicated at 14 and has its longer arm formed with slots 15 defined by overhanging projections 16. The different slots are of different sizes and are intended to receive coins of different denominations.

The slots for the heavier coins are naturally nearer the pivot point than the slots for the lighter coins. It is preferable that the balance arm be inscribed adjacent each coin slot with a legend indicating the denominations of the coin intended to be inserted in that particular slot. From an inspection of Figure 3 it will be seen that the slots will receive gold coins of $20.00, $10.00, $5.00, $3.00 and $2.50 denominations and silver coins of $1.00, 50¢ and 25¢.

In the use of the device any coin to be tested is inserted into the proper slot as indicated by the legends. If a coin is too thick to be genuine or of too large diameter, it will not enter the slot at all, while if it is too thin or of too small diameter to be genuine it will pass entirely through, thus indicating its spurious nature. If the coin is of the proper size but of the wrong weight, the arm will either fail to swing upon its pivot 14, or else will swing too far, again indicating that the coins are counterfeit or else that they have been "sweated" or "plugged," as is a common occurrence in the matter of gold coinage, or else that the coin is of an unauthorized alloy. It is of course necessary that the positions of the various slots be carefully gaged, so that a $2.50 gold piece, for example, will swing the balance arm just as freely as will a $20.00 gold piece.

From the foregoing description and a study of the drawings, it will be apparent that I have thus provided a simply constructed and consequently inexpensive device which will positively operate to test coins and detect all counterfeits. The device is well adapted for use in any business and is neat in appearance and rapid in action. Owing to the simplicity of the construction and the fewness of the parts it is apparent that there is nothing to get out of order so that the device should have a long life and satisfactorily perform all of its functions.

While I have shown and described the preferred embodiment of the invention it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention I claim:

A device of the character described comprising an elongated supporting base

formed at one end with spaced upstanding ears, an elongated lever disposed between said ears and formed at opposite edges of its intermediate portion nearer one end than the other, with angular extensions constituting trunnions pivotally engaged through said ears, the shorter arm of said lever being weighted and normally resting upon the top of said base at one end thereof, and the longer arm of the lever being formed with a plurality of slots of different widths and lengths adapted to receive coins of different denominations to be tested said longer arm of the lever being inscribed with legends opposite the respective slots for indicating the denomination of coins to be engaged therein.

In testimony whereof I, WOLF BRAGIN, administrator of the estate of Leopold Bragin, deceased, affix my signature.

WOLF BRAGIN.

Administrator of Leopold Bragin, deceased.

No. 33,000.

D. CUMMING, Jr.

COIN AND LETTER SCALE.

Fig. 3.

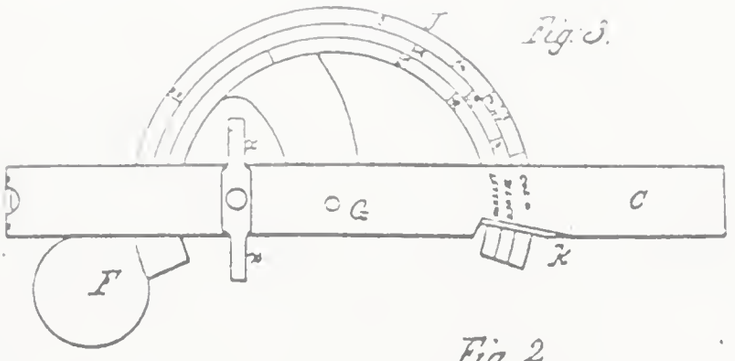


Fig. 2.

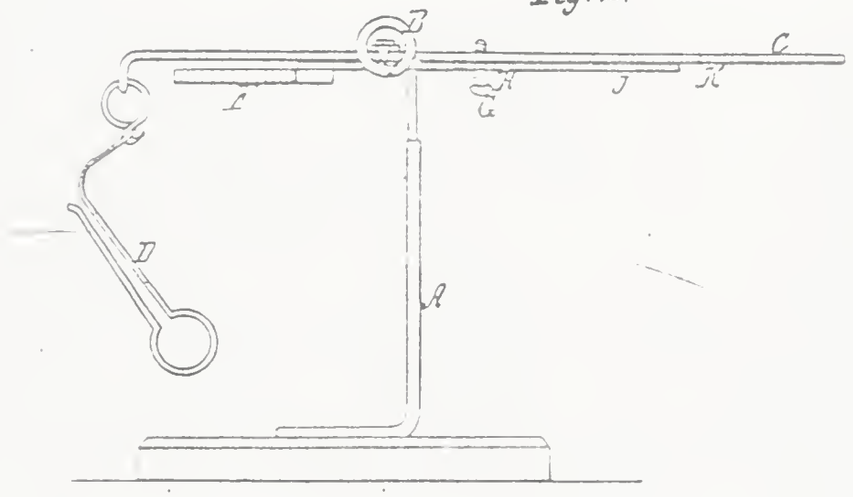
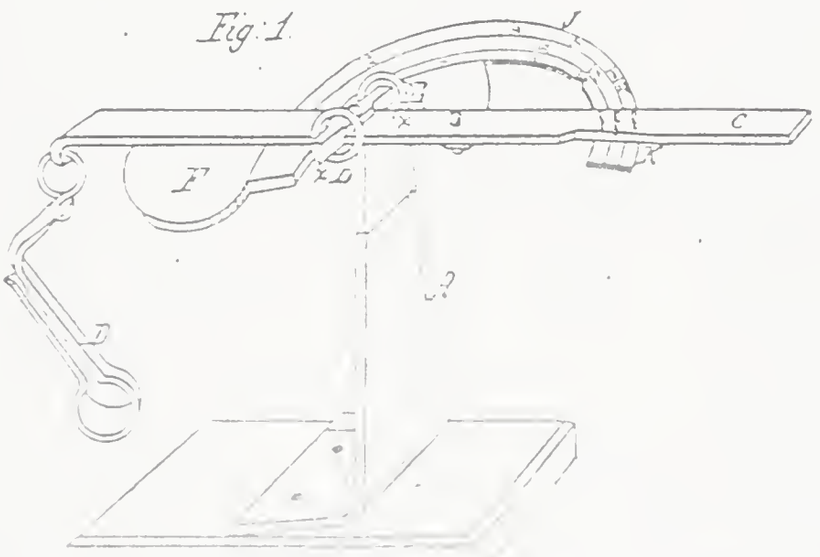


Fig. 1.



Witnesses,

Inventor

UNITED STATES PATENT OFFICE.

DAVID CUMMING, JR., OF NEW YORK, N. Y.

IMPROVEMENT IN COIN AND LETTER SCALES.

Specification forming part of Letters Patent No. 39,890, dated September 15, 1863; antedated February 2, 1863.

To all whom it may concern:

Be it known that I, DAVID CUMMING, Jr., of New York, county and State of New York, have invented a new and useful Improvement in Coin and Letter Scales; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a longitudinal elevation, and Fig. 3 a horizontal plan of the top.

The same letters refer to corresponding parts in the different figures.

A is the standard, with the bearings B B, on which the knife-edges *x x* rest. The knife edges are firmly secured to the beam C, one end of which has the spring-holder D swinging freely from it on a knife edge. F is a weight, which is attached to the beam by the pivot G. The weight moves freely on the pivot, and is held where required by the spiral spring H on the pivot. Attached to the weight is the curved plate J, containing the marks and figures of the denomination of the different coins, and also the marks and figures indicating an ounce and parts of an ounce for weighing letters.

Manner of working: The coin to be weighed is placed in the spring-holder, and the weight moved around on the pivot until the mark of the denomination of the coin on the curved plate is directly under the index K on the beam. If the coin is of the proper weight, the beam will be inclined toward the end on which the coin hangs. Letters are weighed in the same manner.

The machine has been tried and works well, and can be manufactured at a small cost.

What I claim as new, and desire to secure by Letters Patent, is—

The pivoted weight F and curved plate J, operated substantially as described, and for the purpose set forth.

D. CUMMING, JR.

Witnesses:

STEPH. WM. SMITH,
J. S. TUTTLE.

H. MARANVILLE.

Postal-Scale and Counterfeit-Coin Detector.

No. 203,057. Patented April 30, 1878.

Fig. 1

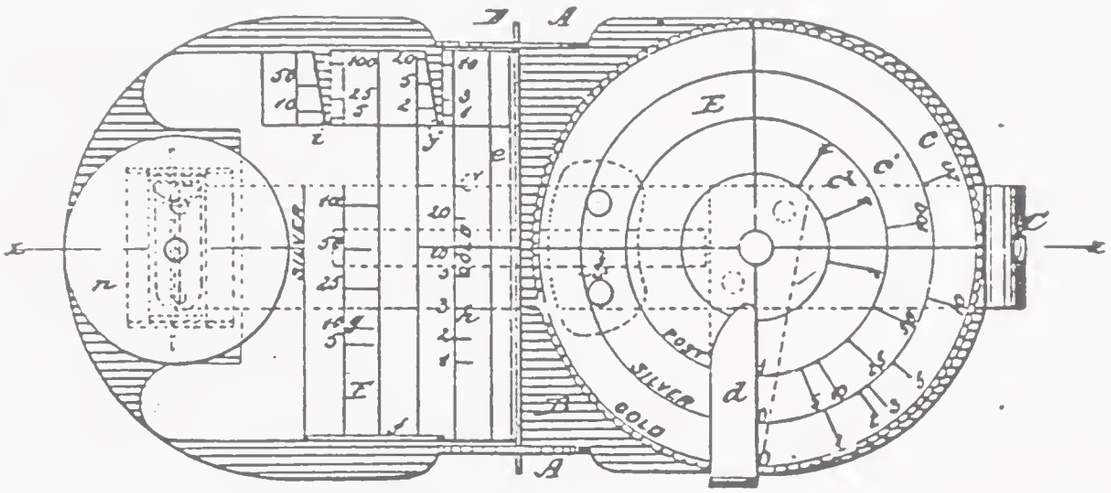
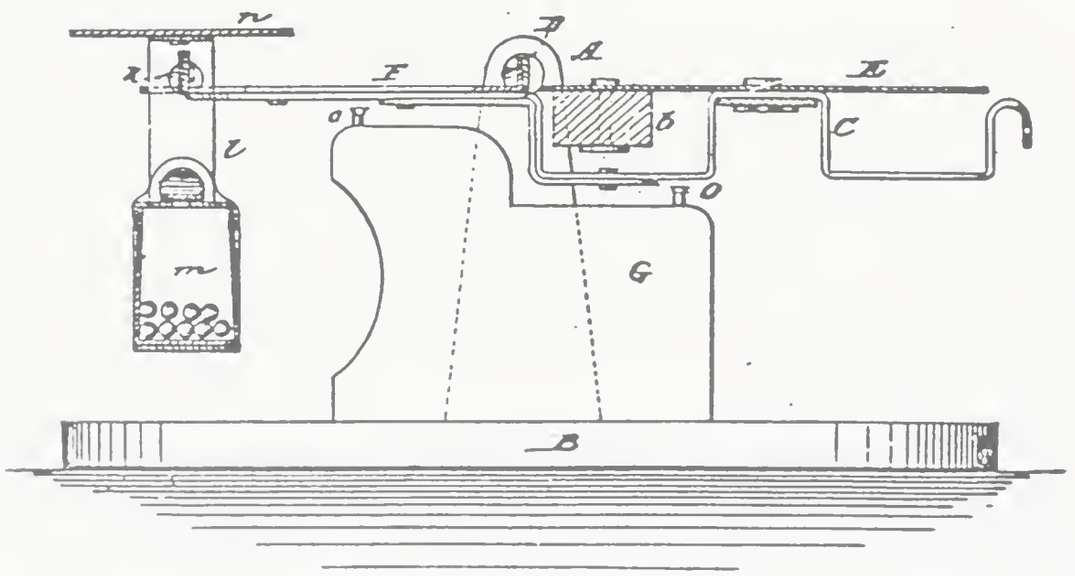


Fig. 2.



WITNESSES:

Francis McArdle.

C. Sedgwick

INVENTOR:

H. Maranville

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HARVEY MARANVILLE, OF AKRON, OHIO, ASSIGNOR TO HIMSELF AND SAMUEL D. STEWART, OF SAME PLACE.

IMPROVEMENT IN POSTAL-SCALE AND COUNTERFEIT-COIN DETECTER.

Specification forming part of Letters Patent No. **203,057**, dated April 30, 1878; application filed March 7, 1878.

To all whom it may concern:

Be it known that I, HARVEY MARANVILLE, of Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Scales, of which the following is a specification:

Figure 1 is a plan view of my improved scales. Fig. 2 is a longitudinal vertical section.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide scales for testing coin and weighing small articles, more especially coin and mail matter; and it consists in a beam having upon one end a graduated rotating disk, which carries the counterpoise, and upon the other end a scale for measuring the diameter and thickness of coin, and a pivoted platform for receiving the coin or packages to be weighed.

Referring to the drawing, A A are standards projecting perpendicularly from the base B, and C is a beam attached to a cross-bar, D, the edges of which are V-shaped and have a bearing in apertures in the standards A.

A disk, E, is pivoted to the beam C, and carries on its under surface a weight, *b*. The beam is bent or offset to permit of turning the disk, and the upper face of the disk is provided with three sets of graduations—one set for gold, one for silver, and one for mail matter.

The outer circle, *c*, on the disk is graduated for gold, the first graduation being for one dollar, the second for two and one-half dollars, the third for five dollars, the fourth for ten dollars, the fifth for twenty dollars, and so on. The second circle, c^1, is graduated for silver, the first graduation being for five cents, the second for ten cents, and so on. The third and inner graduation, c^2, represents weights corresponding to certain rates of postage, the first or zero graduation representing a package having a weight requiring one three-cent stamp, the second graduation representing a weight that requires two three-cent stamps, the third three three-cent stamps, and so on.

An arm, *d*, is attached to the beam C, and extends over the upper face of the disk E, and serves as an index in adjusting the disk. Upon the opposite side of the cross-bar D there is a plate, F, which is provided with two lips, *e f*, against which to place the coin in measuring the diameter. The lip *e* is riveted to the bar D, and the lip *f* is at right angles to it.

Upon the face of the plate F there are two sets of graduations—one set, *g*, for silver coin, and the other set, *h*, for gold coin. The graduations for silver coin range from five cents to one dollar, and graduations for gold coin range from one to twenty dollars.

In the edges of the plate F, opposite the lip *f*, two V-shaped notches, *i j*, are formed. The notch *i*, which is for the measurement of the thickness of silver coin, is graduated for five, ten, twenty-five, fifty cents, and one dollar. The notch *j* is graduated for the measurement of the thickness of gold coin, the graduations being for coins ranging from one to twenty or fifty dollars.

The end of the beam C projects upward through a notch in the outer edge of the plate F, and to it is riveted a bar, *k*, whose upper edge is V-shaped. A stirrup, *l*, having apertures for receiving the ends of the bar *k*, is supported by the said bar, and has attached to it, below the pivot, a box, *m*, for containing shot or sand for adjusting the scale and for keeping the stirrup in a vertical position. A disk, *n*, is attached to the upper end of the stirrup, for receiving coin or other articles to be weighed.

When it is desired to weigh an article, the disk E is turned until the proper graduation appears at the indicating-bar *d*, when the weight *b* will be in the proper position to counterbalance the article. Coin is measured as to thickness by the V-shaped notches *i j*, and its diameter is measured upon the scales *g h* by placing them against the lip *f*.

A block, G, is placed under the beam C, and in it there are two screws, *o*, one each side of the bar D, for limiting the motion of the beam.

The advantages claimed for my improved scale are that it is convenient, simple, and accurate, and, as all of the parts are connected together, none of them can become lost.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In scales, the beam C, having an upwardly-convex middle bend that supports on a pivot the disk E, and concavities on each side that allow the passage of a weight, *b*, as set forth.

2. The combination of the graduated disks E and plates F, supported on beam C, the former having weight *b*, and the latter a stirrup, as and for the purpose specified.

HARVEY MARANVILLE.

Witnesses:

GEO. G. ALLEN,

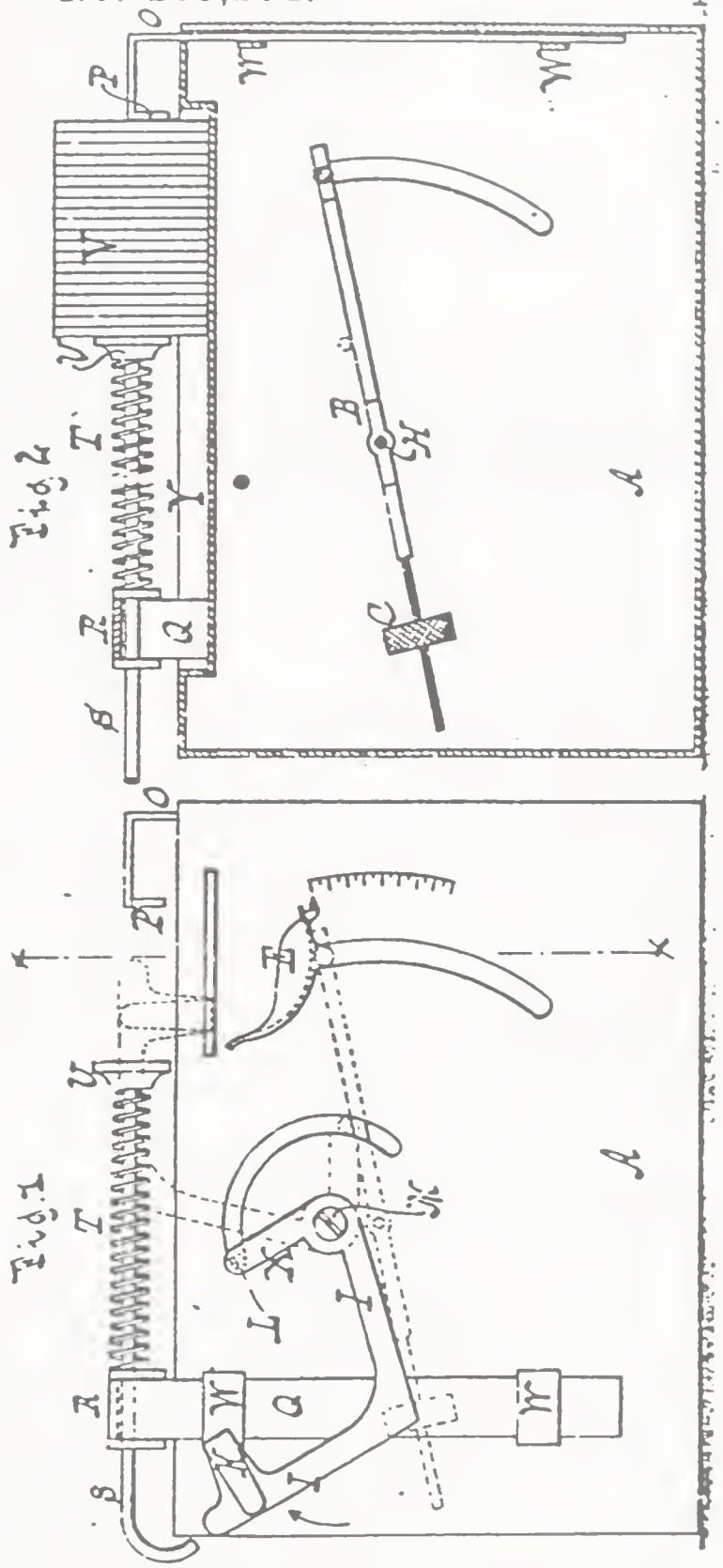
G. S. SCOTT.

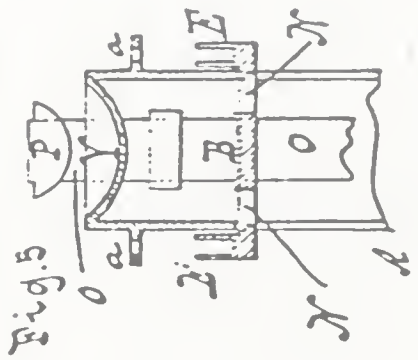
(Model.)

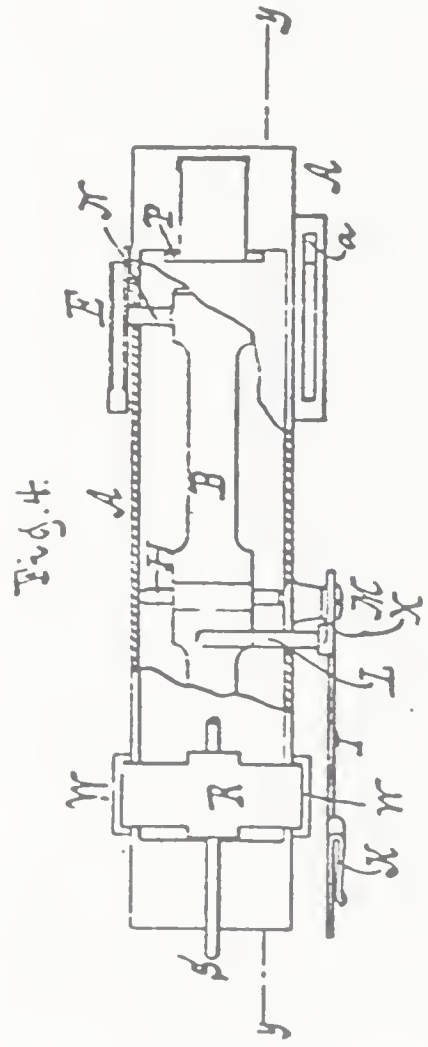
E. BACHMANN.

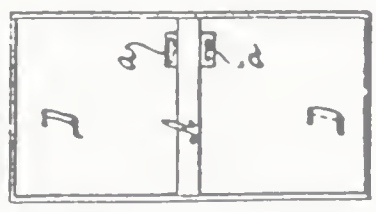
COIN DETECTOR.

No. 285,204. Patented Sept. 18, 1883.









WITNESSES:

Otto Hufeland

William Miller

INVENTOR

Emil Bachmann

BY Van Santvoord & Hauff

ATTORNEYS

UNITED STATES PATENT OFFICE.

EMIL BACHMANN, OF NEW YORK, N. Y.

COIN-DETECTOR.

SPECIFICATION forming part of Letters Patent No. 285,204, dated September 18, 1883.

Application filed June 14, 1883. (Model.)

To all whom it may concern:

Be it known that I, EMIL BACHMANN, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Coin-Detectors, &c., of which the following is a specification.

This invention relates to coin-detectors; and it consists in the combination, with a coin-tester, of a letter-weighing device, which may be brought into operative connection therewith; also, in providing such a detector with a coin-holder or roll, and in the novel features of construction and arrangement hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of the detector. Fig. 2 is a section in the plane *y y*, Fig. 4. Fig. 3 is a plan view of the detector and contiguous money-receptacles. Fig. 4 is a plan view of the detector with the inclosing-case partly broken away. Fig. 5 is a section in the plane *x x*, Fig. 1, partly broken away.

Similar letters indicate corresponding parts.

A indicates an inclosing-case, made of sheet metal or other suitable material. Within this case, about a fulcrum or pivot, H, swings or oscillates a lever, B, which is provided with a weight, C, which weight, being mounted on a screw-thread, as shown, may be adjusted nearer to or farther from the fulcrum H of the lever B, thus varying the efficiency of its action, as will be readily perceived. The other end of the lever B is provided with pans E E, supported on arms N N, projecting through slots in the case A, and said arms N N are placed at varying distances from the fulcrum or pivot H of the lever. The object of this arrangement is that the pan E, which is supported on the arm N nearer to the fulcrum or pivot H, will require a heavier coin to depress the lever B than that pan supported on the arm N farther from the pivot H. Each lever B is thus adapted for weighing coins of two different denominations, thus economizing space. In practice it will be well to make the arms N adjustable on the lever B by a screw-thread, or by a screw passing through a slot, or by any other means readily attainable by a mechanic, so that each arm N, with its pan E, may be adjusted just such a distance from the fulcrum H as is necessary to enable the coin intended to be tested to depress the lever B sufficiently to allow the coin to drop off the pan into one of the respective receptacles D D, Fig. 3.

Above the pans E, and projecting from the side of case A, are slotted tongues, forming inlet-throats *a a*, Fig. 3, and these inlet-throats are made of such a width as to allow only a certain size of coin to pass through, for the weighing of which particular coin the pan E immediately under said throat *a* is to be adjusted. The device thus serves both as a coin-detector and as a gage.

The lever B is shown as being straight; but it may be curved or shaped in any desired manner.

Swinging about a pivot, M, at the side of the case is a scale-beam or lever-arms, I X, the arm X of which has a finger or stud, L, passing through a slot in a case, A, sufficiently far that when the lever-arms I X are swung up in the direction of the arrow, Fig. 1, to the position shown in dotted lines, the finger L will strike upon the lever B. The arm I is provided with a hook or attaching device, K, into which a letter or other article may be inserted, and the action of the finger L on lever B will cause such letter or articles to be weighed. The hook or attaching device K may be made adjustable at varying distances from the pivot M, so as to secure accuracy in the operation of weighing.

The top of case A is provided with a channel or holder, Y, in which may be placed coins V, Fig. 2. Sliding in guides W are arms or supports O Q. The arm O supports a washer or finger, P, while the arms Q support a bridge, R, through which slides a finger, S, provided with a washer, U. A spring, T, tends to force the washer U toward the washer P, thus compressing or holding a roll of coins, V, which may be placed between them, and keeping them ready for being done up in a paper wrapper, if desired, which paper wrapper may be placed in the channel Y under the coins V. The arms O Q, sliding in the guides W, allow the compressing device to be adjusted at varying heights from the top of the case A, or, if not in use, to be pushed down into the channel Y.

I am aware that it is not new to have a coin

detector and receiver combined, as such is shown in United States Letters Patent No. 203,719, of May 14, 1878.

The advantages of my device are that it can be made compact in form, taking up very little room and wasting no space, and it serves the various purposes of a money-drawer, money-gage, money-scale for varying denominations, money-roller, and letter-scale, while the adjustability of parts allows compensation for any wear of the apparatus.

What I claim as new, and desire to secure by Letters Patent, is—

1. A coin-detector consisting of the case having a weighted lever, B, carrying pans E E, arranged as described, and having the coin-holder consisting of a channel, Y, and compressors U P, each supported upon a vertically-adjustable arm or slide, substantially as described.

2. In a coin-detector, the combination, with the weighted lever B, of a bent arm, I, having clasp K, and pivoted upon shaft M, and the arm X, rigid with the arm I, having stud L, which rests upon the beam B when the arm I is turned into position for use, substantially as described.

3. In a coin-detector, the combination, with a weighted lever, B, provided with pans E, of arms or scale-beam I X, adapted to engage with said weighted lever B, substantially as and for the purpose set forth.

4. In combination with a coin-detector, a money-roller consisting of a holder or channel, Y, and compressors U P, arranged and adapted to operate substantially as set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

EMIL BACHMANN. [L. S.]

Witnesses:
W. HAUFF,
D. VAN SANTVOORD.

(No Model.)

E. C. PURNELLE.

COMBINED LETTER SCALE AND COIN TESTER.

No. 292,763. Patented Jan. 29, 1884.

Fig. 1

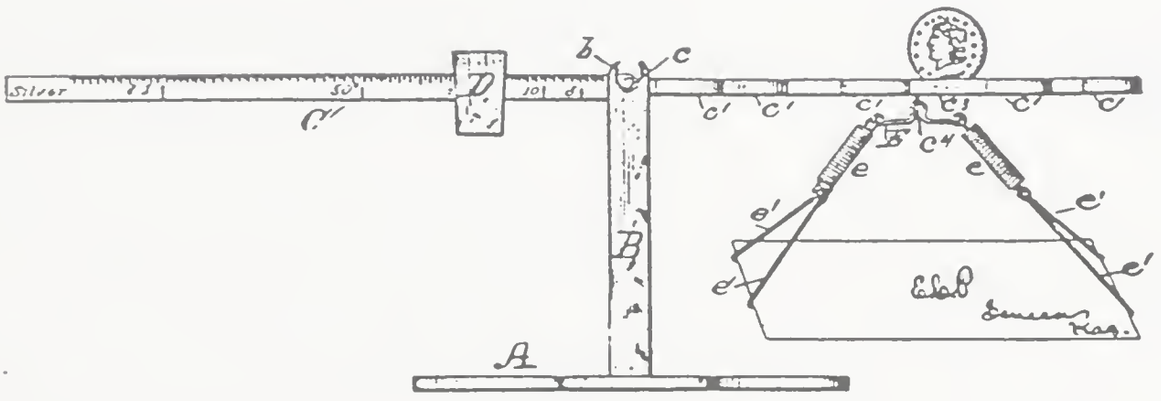
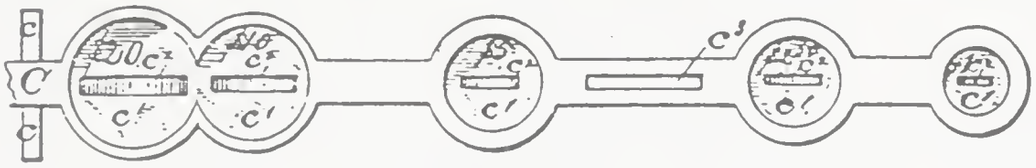


Fig. 2.



Witnesses:
L. C. Hills.
E. E. Mann

Inventor
E. C. Purnelle
By E. B. Stocking
Atty.

UNITED STATES PATENT OFFICE.

EDWARD C. PURNELLE, OF SENECA, KANSAS.

COMBINED LETTER-SCALE AND COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 292,763, dated January 29, 1884.

Application filed July 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. PURNELLE, a citizen of the United States, residing at Seneca, in the county of Nemaha and State of Kansas, have invented certain new and useful Improvements in Combined Letter-Scales and Coin-Testers, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation of a letter scale and coin-tester constructed in accordance with my invention, and Fig. 2 is a plan of the coin-holding portion of the scale-beam.

Like letters refer to like parts in both figures.

A represents the base, and B the pedestal, either or both of which may be made of metal or glass, and in any design, according to the taste of the manufacturer. The pedestal is slotted or notched at its upper end to receive the beam C, and a transverse slot or groove, *b*, is formed for the reception and support of the knife-edged trunnions *c* of the beam. The beam is graduated to ounces and fractions of ounces, and also bears indicating-marks so located relative to the trunnions as to balance the weight of silver coins of the various denominations when one of such coins is in its proper place (slot c^2) in the coin portion of the beam, and when the weight D is at the proper one of said indicating-marks, as clearly indicated in the drawings. The coin portion of the beam is provided with circular depressions or cups c', each adapted to receive one denomination of gold coin, and within said cups are slots c^2, of a width equal to the coin which fits each of said cups, whereby any lacking in diameter or thickness of any coin placed therein is immediately detected, while a lack of weight in any such coin is indicated by the depression of the opposite portion of the beam when the weight D is at O. This latter result is accomplished in spacing the cups, or, in other words, locating them at such distances from each other that when the weight D is at O and a coin of gold is in its proper cup the beam is exactly balanced. At c^2 in the connecting-strip of two of the coin-cups is a slot, in which silver coin is placed edgewise, when its weight is to be tested by moving the weight D to the proper indicating-mark on the beam.

At c^4 and upon the under side of the coin-testing portion of the beam is a hook or other suitable device, upon which is placed a yoke, E, of wire or other suitable material, to either end of which are secured coiled springs *e*, each of which is provided with two independent hooks or grapples, e' e', these parts constituting the means employed for weighing letters and other mailable matter.

By the expansion of the springs *e* when under strain, the grapples e' are adapted to be placed in contact with articles of varied size, so as to automatically and firmly grasp and hold the same while being weighed.

Having described my invention and its operation, what I claim is—

1. The combination of the beam C, provided with silver-coin weight-graduations and gold-coin receptacles, spaced as described, and the weight D, substantially as specified.

2. The combination of the beam C, provided with the hook c^4, the yoke E, coiled springs *e*, and grapples e', substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD C. PURNELLE.

Witnesses:
R. M. EMERY,
R. T. LUDLOW.

(No Model.)

C. RICHTMANN.

COIN AND LETTER SCALE.

No. 295,809. Patented Mar. 25, 1884.

Fig. 1.

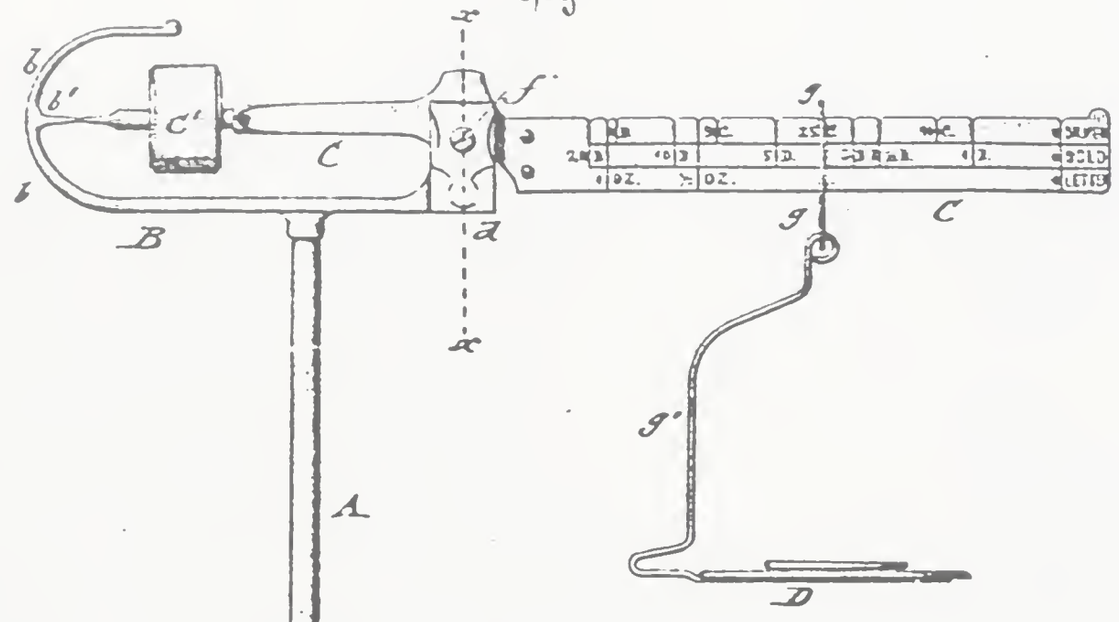


Fig. 3.

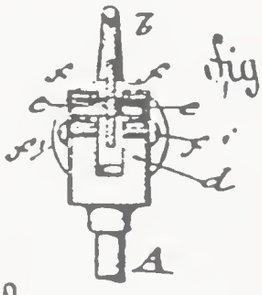


Fig. 2.

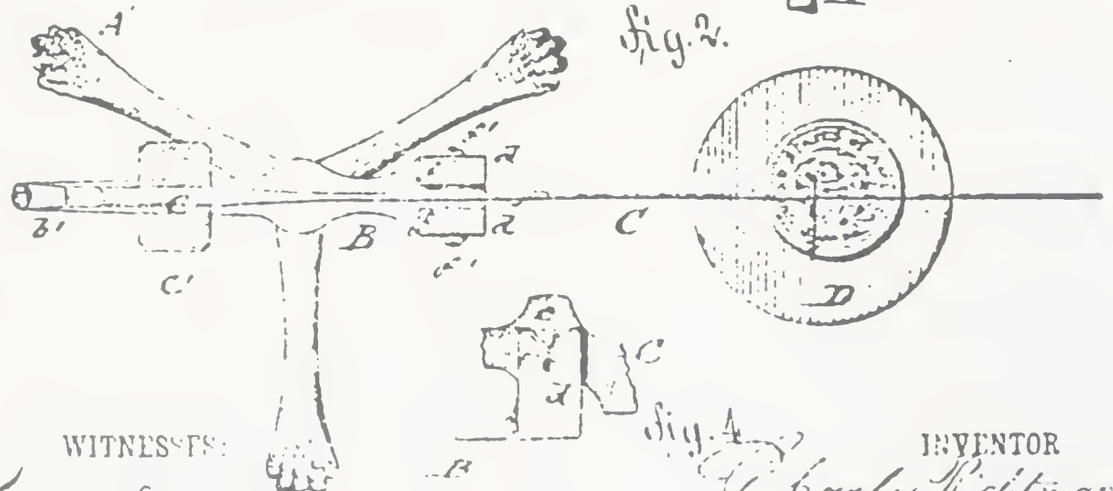


Fig. 4.

WITNESSES:

INVENTOR

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES RICHTMANN, OF NEW YORK, N. Y., ASSIGNOR TO H. RICHTMANN & CO., OF SAME PLACE.

COIN AND LETTER SCALE.

SPECIFICATION forming part of Letters Patent No. 295,809, dated March 25, 1884.

Application filed October 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RICHTMANN, of the city, county, and State of New York, have invented certain new and useful Improvements in Coin and Letter Scales, of which the following is a specification.

This invention has reference to an improved coin and letter scale, which, in contradistinction to the letter-scales heretofore in use, is made with one fulcrum only and capable of a high degree of accuracy.

The invention consists of a supporting-standard having a horizontal bar that has a hooked-shaped guard at one end, provided with a central index-point for the inner weighted end of the oscillating scale-beam, and that has at the other end bearings for the knife-edge pivots of the same. The outwardly-extending opposite end of the scale-beam is provided with graduations and notches for coins and letters of certain weights, which graduations extend inwardly from the outer end toward the fulcrum, while the notches serve for recessing the sliding link of a scale-pan suspended from the beam.

In the accompanying drawings, Figure 1 represents a side elevation of my improved coin and letter scale. Fig. 2 is a plan of the same, partly in section. Fig. 3 is a detail vertical transverse section on line *x x*, Fig. 1; and Fig. 4 is a detail side view, showing the bearings and knife-edged pivots of the beam-scale.

Similar letters of reference indicate corresponding parts.

A in the drawings represents an upright supporting-standard, which is supported on feet A′ or on a suitably-weighted base.

To the upper end of the standard A is applied a horizontal arm, B, which is bent at one end into the shape of a semicircular hook or guard, *b*, at the center of which is arranged an inwardly-extending index or pointer, *b′*. At the opposite end of the horizontal arm B are arranged vertical bearings *d d* for the knife-edged pivots *e e* of a scale-beam, C, which is made tapering at the end adjoining the index *b′*. A weight, C′, is arranged at the inner end of the scale-beam C, which is adapted to oscillate vertically between the end of the hook or guard *b* and the horizontal arm B, which acts thereby as stops to limit the oscillations of the scale-beam. The bearings *d d* are provided with tapering recesses *e′* for the knife-edged pivots or fulcrum *e* of the scale-beam, which pivots are retained in said recesses *e′* by angular cap-plates *f f*, which are secured by fastening-screws *f′* to the outside of the bearings *d d*, their upper ends lapping over the bearings *d d* and the pivots *e e* of the scale-beam, as shown in Fig. 3. By this arrangement the scale-beam is retained in position, and cannot be removed from the horizontal supporting-arm B. The outer end of the scale-beam C is provided with a series of graduations or scales extending from the zero-line near the outer end of the beam toward the fulcrum thereof. The upper series or scale, C′, is arranged to indicate the weights of silver coins, the middle scale, C², to indicate the weights of gold coins, and the lower scale, C³, is graduated to serve as a letter-scale. The graduations of the upper scale are marked, respectively, "10 c." for ten cents, "25 c." for twenty-five cents, "50 c." for fifty cents, and "1 D." for one dollar, and the upper edge of the scale-beam is provided with notches corresponding with these graduations. The graduations of the middle scale are marked "1 D." for one gold dollar, "2½ D." for a quarter-eagle, "3 D." for a three-dollar gold-piece, "5 D." for a half-eagle, "10 D." for an eagle, and "20 D." for a double-eagle, and the upper edge of the scale-beam is provided with notches to correspond with these graduations. The graduations of the lower scale are marked "½ oz." for one-half ounce, "1 oz." for one ounce, and the upper edge of the beam is provided with notches to correspond with these graduations. A slotted slide-link, *g*, is placed on the beam, and a suspension-arm, *g′*, supporting a scale-pan, D, is attached to the lower end of said slide-link. If the slide-link be placed in the notch of the graduating-line indicating a half-eagle, and one of the latter be placed in the scale-pan, the beam will remain balanced, if the half-eagle be a genuine one, the index *b′* serving to indicate the slightest deviation. If any other gold coin or a silver

coin or a letter be placed on the scale-pan and the slide-link adjusted to its proper position, according to the article being weighed, the beam will respond in a very accurate manner, the tapering end of the beam, in connection with the index *b*, being in alignment when the beam is balanced.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A scale for coins and letters, comprising a supporting-standard, a horizontal supporting-arm attached to said standard, provided with a hook-shaped guard having an inward projection or index at the center of the hook, a scale-beam pivoted in said bearings, one end of which is provided with a weight and adapted to oscillate within the hook-shaped guard, being in alignment with the index thereof when balanced, the outer end of said beam being graduated, a slide-link on said scale-beam, and a scale-pan suspended from said link, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES RICHTMANN.

Witnesses:

PAUL GOEPEL,

SIDNEY MANN.

(No Model.)

E. KNIGHT.

LETTER SCALE AND COIN TESTER.

No. 388,138. Patented Aug. 21, 1888.

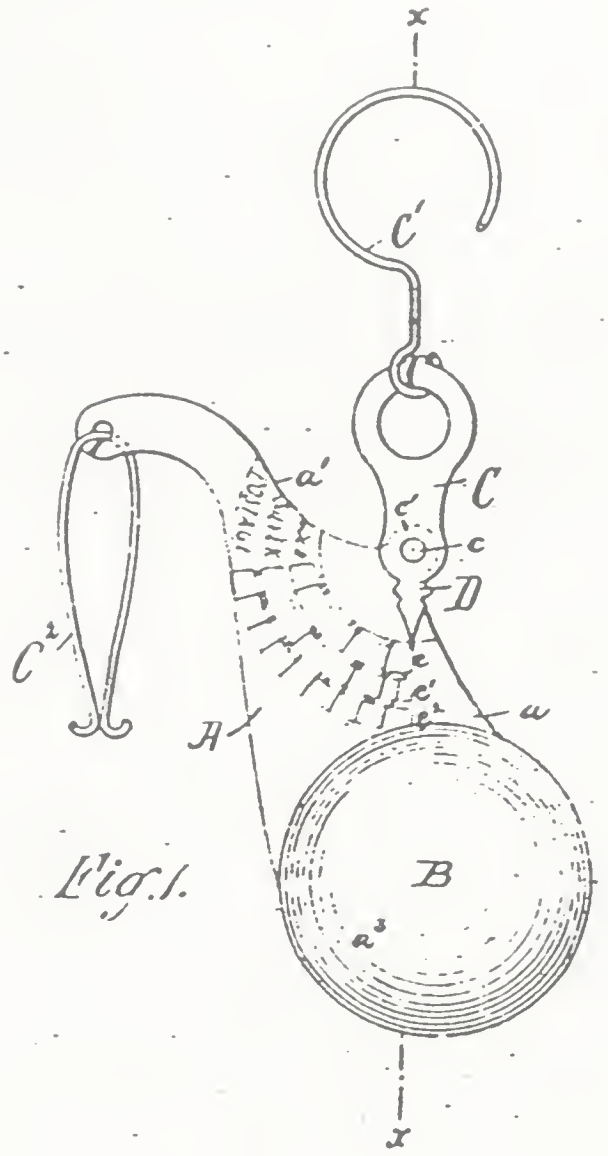


Fig. 1.

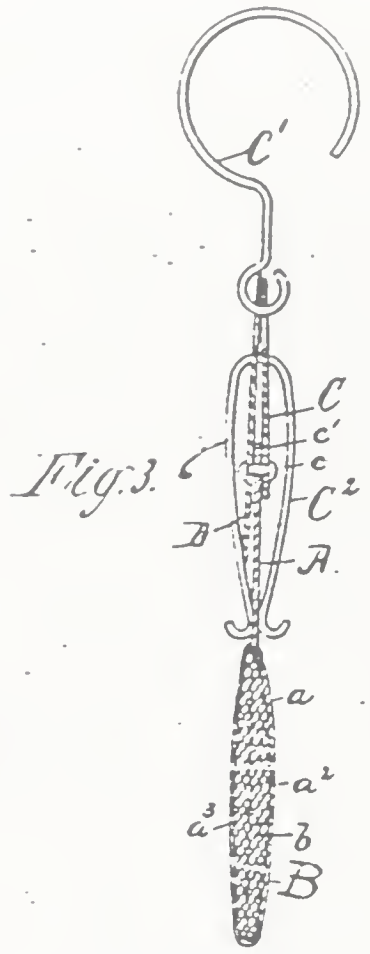


Fig. 3.

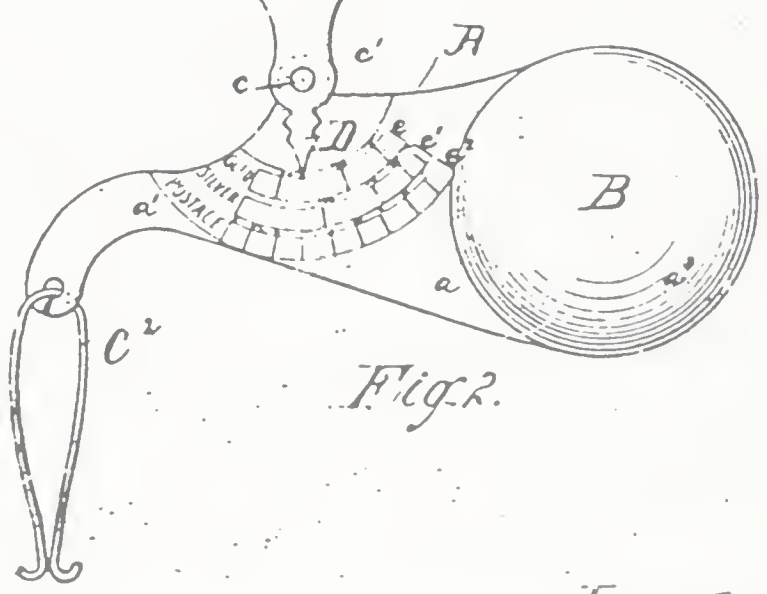


Fig. 2.

Witnesses.
M. Benjamin.
A. J. Fales.

Inventor.
Edgar Knight.
By Arden S. Fitch.
atty

UNITED STATES PATENT OFFICE.

EDGAR KNIGHT, OF SAYBROOK, CONNECTICUT.

LETTER-SCALE AND COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 389,139, dated August 21, 1888.

Application filed September 2, 1887. Serial No. 248,200. (No model.)

To all whom it may concern:

Be it known that I, EDGAR KNIGHT, of Saybrook, county of Middlesex, State of Connecticut, a citizen of the United States, have invented an Improved Letter Scales and Coin-Tester, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a combined letter-scale and coin tester; and it consists in the combination of devices hereinafter described, and as more at length recited in the claim.

Figure 1 is a front elevation of the instrument containing my invention, and showing it at rest. Fig. 2 is a similar view of the same, showing it in the operation of weighing; and Fig. 3 is a longitudinal section on the line *x x*, Fig. 1.

A is the beam, consisting of a metal plate, which is pivoted to oscillate in a clip, C, by means of a pin, *c*, passed loosely through the beam at *c'* and through the clip. The upper end of the clip is perforated, as shown, so that the instrument may be suspended by the clip. The clip is desirably furnished with a hook, C', which is loosely linked into the perforated end of the clip as furnishing a convenient means for suspending the clip. The clip is preferably composed of two links, as shown, with the beam seated loosely between them. The portion *a* of the plate-beam A contiguous to the fulcrum-pin *c* is wide faced or broad in extent, and upon this wide faced portion *a* I form or place indicator-scales *c' c² c³*, one or more, each in the shape of or describing an arc of a circle of which the fulcrum-pin *c* is the center. The clip C is extended past the fulcrum-point *c*, and its extended end lies over the wide faced scale portion *a* of the plate-beam, and constitutes a pointer, D, which ranges over said portion *a* of the beam when the beam oscillates in the clip.

One end of the plate-beam is weighted, as at B. This may be effected by forming a concavity, *a'*, in the plate, placing therein a corresponding weight, *b*, and then covering the weight with a cap, *a²*. A beam of desirable appearance is thus produced. The opposite arm *a'* of the beam is provided with a holder, C², in the form, preferably, of a spring-wire clip linked loosely to the end of said arm. The arm *a'* is desirably narrow, as shown, and has a downward curve at its free end.

The indicator-scales *c' c² c³*, each or all, are so arranged on the portion *a* of the beam relatively to the pointer D that when the beam gravitates to rest in the suspending-clip C the said pointer will indicate zero on the scale or scales. The scale *c²* may then be marked or graduated to indicate ounces and fractions thereof for use in weighing postal matter, while the scales *c' c³* may be graduated to indicate the correct weight of gold and silver coins, respectively, as shown in the drawings.

Heretofore in constructing postal and analogous scales of this description—namely, with a suspended beam, a suspending clip, and a weighted arm on said beam—the indicator scale or scales have been placed upon the face of the extremity of the weighted arm, and an independent pointer has been loosely pivoted upon the face of said arm and allowed to gravitate over said scale or scales for the purpose of indicating the weight of articles suspended on the opposite arm; but in operating scales thus constructed the pointer is exceedingly liable to get out of proper adjustment relatively to the indicator-scales on the weighted arm, and therefore to indicate inaccurately on the scales. By means of an apparatus constructed as I have herein described, the pointer being a part of the suspending-clip C and ranging over the scale portion *a* of the beam all liability of inaccuracy is obviated.

I do not claim, broadly, herein the combination, with a pointer carried by the suspending-clip, of a graduated beam over which said pointer ranges, as I am aware that such devices are not new. I intend to limit my claim hereunder to the combination, with the peculiar scale beam shown, consisting of a plate fulcrummed at one edge, between its ends, in a suspending-clip, and having one end weighted, of an indicator scale or scales in the form of an arc of a circle of which the fulcrum is the center, on said plate-beam, and a pointer constituted by an extension of the suspending-clip and ranging over the arc scales on said beam.

What I claim as my invention, and desire to secure by Letters Patent, is—

In weighing scales, the combination of the

plate A, constituting the scale-beam, and pivoted or fulcrumed at one edge between its ends to the suspending-clip C, and provided with the weight B and the clip C' at opposite ends of said beam, respectively, and having a graduated scale, one or more, in the form of the arc of a circle of which the fulcrum is the center on its side face, as described, with a pointer, D, constituted by an extension of the suspending-clip over the side face of the beam, and adapted to range over the graduated scale, as and for the purpose specified.

EDGAR KNIGHT.

Witnesses:
HENRY KNIGHT,
JOSEPH KELLOGG.

(No Model.)

J. B. ATWATER.

COUNTERFEIT COIN DETECTOR.

No. 264,431. Patented Sept. 19, 1882.

Fig. 1.

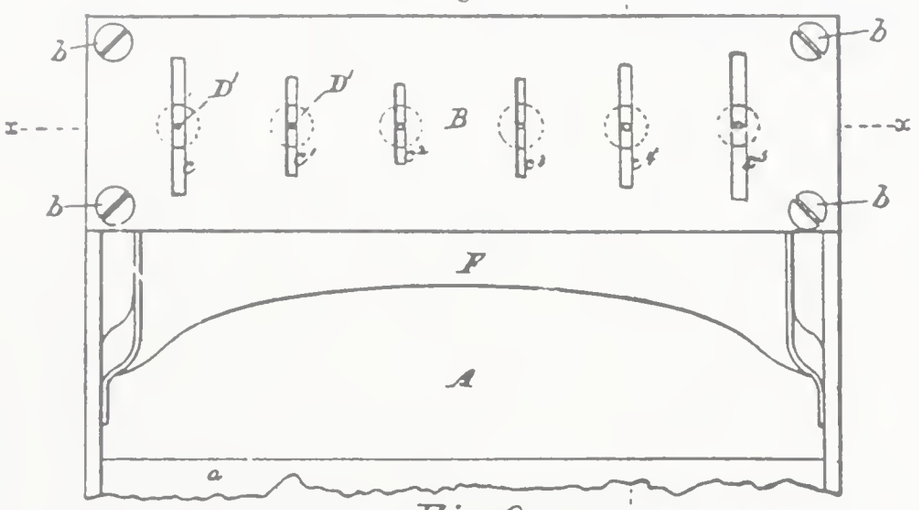


Fig. 2.

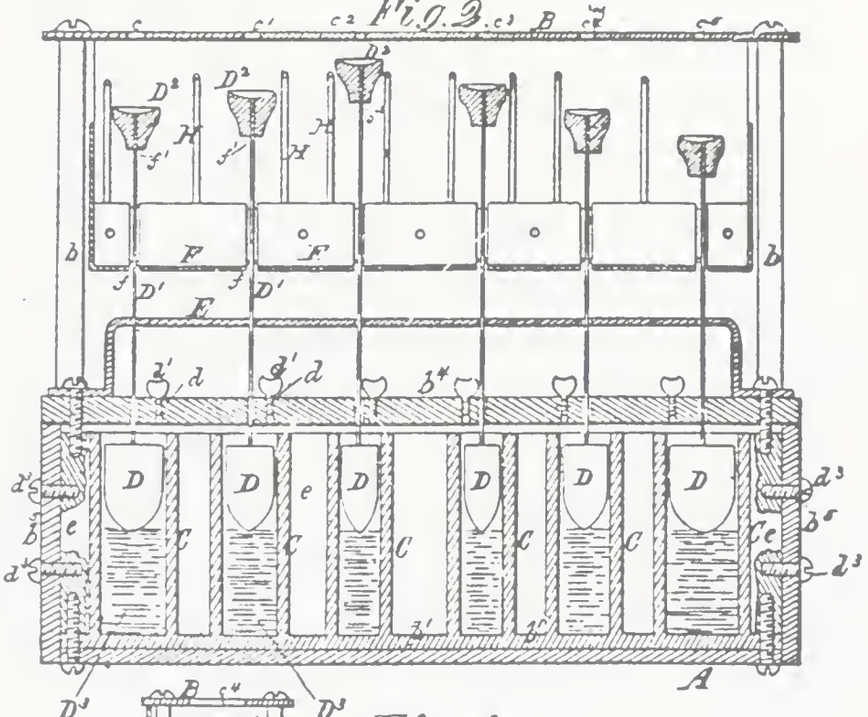
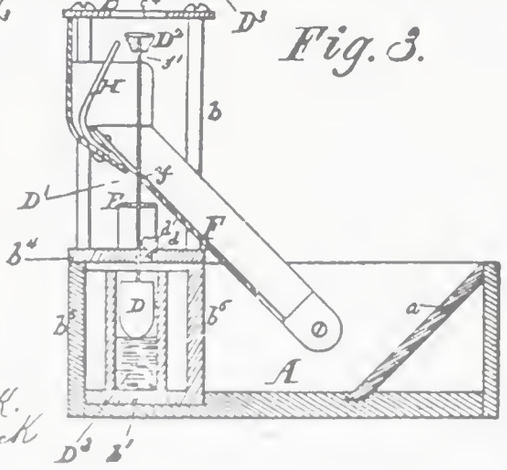


Fig. 3.



Witnesses:
Robt. S. Fennick.
B. Earlyle Fennick

Inventor:
John B. Atwater
by his Attys
Fennick & Lawrence

UNITED STATES PATENT OFFICE.

JOHN B. ATWATER, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTOR.

SPECIFICATION forming part of Letters Patent No. 264,431, dated September 19, 1882.

Application filed May 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ATWATER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Counterfeit-Coin Detector, of which the following is a specification.

My invention relates to a mach'ne which determines the genuineness of coins by measuring and weighing the same; and the nature of my improvements consist, first, in the combination of a series of tight cylinders or other shaped vessels supplied with quicksilver through a suitable plugged aperture, a series of weighing-trays mounted at different altitudes upon suitable guide-stems of a series of conical or other suitably-shaped floats which rest upon the quicksilver within the said vessels, and a measuring table or plate provided with a series of slots of a length and width corresponding respectively to the diameter and thickness of the respective standard coins of the United States or other countries, this combination being such that the float-stems which support the weighing-trays hold the trays while empty at different distances below the horizontal plane of the slotted measuring-table, such relatively different distances being in accordance with the different diameters of the coins, while the amount of float-surface which is immersed in the quicksilver will be in proportion to the respective diameters and weights of the different coins placed upon the respective trays through the respective slots of the table; second, in a combination of the slotted measuring-table, overhanging rods for properly directing the descent of the coins after they are weighed, an inclined conducting-apron, vertically rising and descending trays applied on guided float-stems, and cylindrical vessels supplied with a fluid which retards the descent of the floats, and a coin-receiving box; and, third, in the combination of trays made adjustable on float-stems with vessels containing quicksilver, whereby, in the event of any material change occurring in the density of the quicksilver from effects of temperature, the same may be compensated for by adjusting the altitude of the trays on the float-stems.

In the accompanying drawings, Figure 1 is a broken top view of the improved counterfeit-coin detector; Fig. 2, a vertical section in the line *x x* of Fig. 1, and Fig. 3 is a vertical section in the line *y y* of Fig. 1.

In said drawings, A represents a coin-receiving box, of rectangular or other shape, and having the forward portion of its bottom inclined, as at *a*, so as to cause the coins, after they are measured and weighed and caused to descend, to slide properly down upon the flat portion of the bottom of the box, and also to facilitate the removal of the coins from the box.

B is a measuring table or plate mounted upon standards *b* of the box. This table is a sufficient distance above the box to allow the weighing mechanism to be placed below it, and allow said mechanism to operate properly. Through the table or plate B a series of slots, *c c' c² c³ c⁴ c⁵*, are cut transversely of its length, and these slots are of a diameter and width respectively corresponding to the diameter and thickness, respectively, of twenty-dollar, ten-dollar, and five-dollar gold pieces, and one-dollar, fifty-cent, and twenty-five-cent silver pieces, which pieces are of standard size and weight, those lettered *c c' c²* being for gold pieces and those *c³ c⁴ c⁵* silver pieces. The slots will only admit through the table or plates coins of standard size having a standard weight. Therefore, if a counterfeit coin of full weight is brought over either of the slots, its thickness or diameter will prevent it from passing through the slot. By this means counterfeit or alloyed coins of full weight are detected; but if the coins should be of less weight than the established standard they could be passed through the slots in the table, and hence the weighing mechanism now to be described is combined with the measuring table or plate.

The weighing mechanism which I have devised, and believe to be more accurate than a vibrating weighted beam, is as follows: A series of tight cylindrical vessels, C, of varying diameter and capacity, and supplied with quicksilver through apertures *d*, closed by screw-plugs *d'*, are cast upon a base-plate, *b'*, and connected and stayed by a web, *e*, and, if necessary, the whole inclosed by outer walls, *b⁵*. These cylinders are placed within the coin-box A, directly under the slots of the plate or table B, and secured in position by screws *d²*, as shown. The upper ends of the cylin-

ders are closed by a cap-plate, b^4, in which the apertures d and holes for the stems of the floats to move through are provided. Within these vessels cone-shaped floats D, which are respectively of little less diameter than the respective cylinders, are arranged so as to rest in their normal position upon the quicksilver D^3, as illustrated. The floats may be either of iron, steel, glass, ivory, hard rubber, or wood, or any other material to which the quicksilver will not adhere or by which it will be absorbed. The respective displacing-surfaces of these floats are to be proportioned to the diameter and weight of the coins to be weighed, as illustrated in the drawings. The floats are attached to stems D', which pass up through a guide-bar, E, and through slots f of a coin-conducting apron F, which is screwed to the coin-box and connected to a back plate of the table B, as illustrated. On the upper ends of the stems weighing-trays D^2 are fitted by means of screw-threads F', so that they can be raised or lowered according to the necessities of the case. The trays are arranged centrally under the slots of the measuring plate or table, and they stand respectively at such altitudes as will adapt them for weighing the different standard coins. In setting the trays for operation they may stand so as to require about one-half of the diameter of the respective coins to be passed below the surface of the table in order to rest the coins upon them, and the movement of the trays downward should be sufficient to allow the entire diameter of the respective coins to pass below the under side of the table or plate. This adjustment can be attained by making the stems of the floats for the different coins of different lengths and proportioning the diameter and capacity of the cylinders and the diameters and fluid-displacing surfaces of the floats with respect to the different coins to be weighed. By the use of quicksilver for the purpose described the great weight thereof is made available for keeping a portable counterfeit coin-detector steady while in use.

The inclined coin-conducting apron F is provided at its upper end with a series of separated overhanging directing-rods, H, which are arranged in close relation to the trays D^2—one on each side of a tray—and they serve for properly directing the coins downward upon the apron as soon as they descend below the under surface of the table or plate B.

In operating with this invention the coins are placed by the hand edgewise through the slots of the table B, and as soon as they rest on the trays they are released, when, if of the standard size and weight, they depress the tray, stem, and float, so as to pass entirely through the table and descend upon the apron into the box, being directed by the overhanging rods; but should any one of the coins be less than the standard weight, or a counterfeit, it will remain in the slot, either in consequence of its not being capable of depressing the tray, stem, and float upon which it is resting, or because its bulk has been so increased, in order to give it sufficient weight, by a baser metal than either gold or silver that it cannot pass through the slot. Thus whether a coin is too light and yet of standard metal, or too large on account of its being made heavy enough by a metal not of standard character, the fact will be detected.

In the event of any variation in the operation of the weighing mechanism occurring from change in the height of the quicksilver in the cylinders caused by extreme change of temperature, the same can be regulated by adjusting the trays up or down on the screw-threaded ends of the float-stems.

The great advantage in my weighing mechanism lies in the trays moving straight up and down against the quicksilver, also in its being very compact and regular in its operation. The quicksilver, offering great resistance and yet capable of flowing freely, admits of the machine being made quite small, yet capable of weighing the larger as well as the smaller standard coins with great accuracy, and the combination of a table with slots only adapted for coins of standard size with the weighing mechanism described enables the machine to arrest bogus coins and also coins of standard metal but not standard weight.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A coin-detector comprising in its construction a series of tight cylinders of relatively different diameter and capacity for containing a weighing-fluid—as quicksilver, for instance—a series of weighing-trays mounted at different altitudes upon the stems of a series of floats having respectively different amounts of fluid-displacing surface and being properly guided, and a measuring-table having slots corresponding to standard coins, substantially as and for the purpose described.

2. A coin-detector comprising a slotted measuring-table, overhanging directing-rods, an inclined conducting-apron, vertically-moving trays applied on guided float-stems, cylindrical vessels supplied with a fluid which acts against the floats in their descent, and a coin-box, substantially as described.

3. In a counterfeit-coin detector, floating trays which are adjustable by screw-threads on their stems, and vessels containing quicksilver, substantially as and for the purpose described.

JOHN B. ATWATER.

Witnesses:
CHAS. K. NICHOLS,
GUSTAVE TIDHOLM.

(Model.)

M. CLARKE.

COIN TESTER.

No. 273,667. Patented Mar. 6, 1883.

Fig. 1.

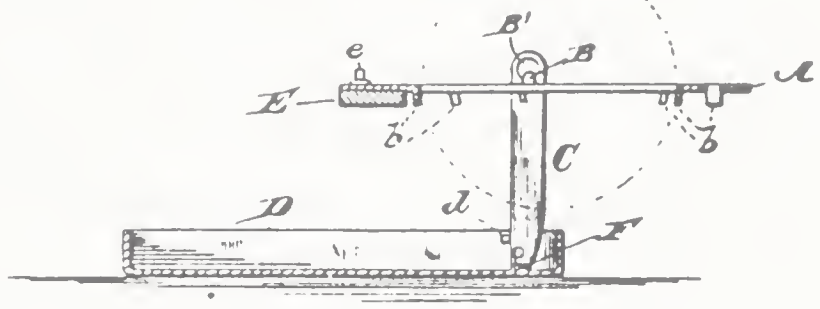


Fig. 2.

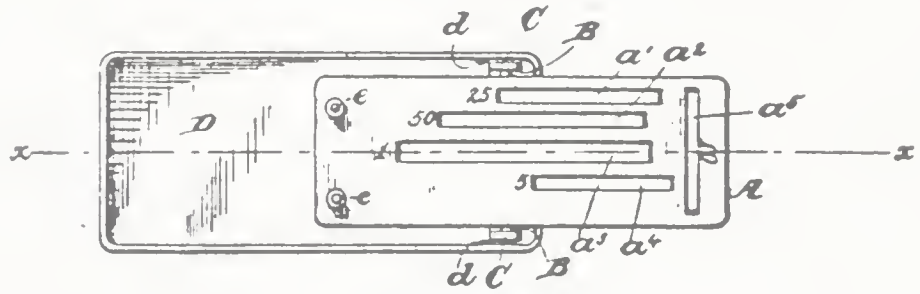


Fig. 3.

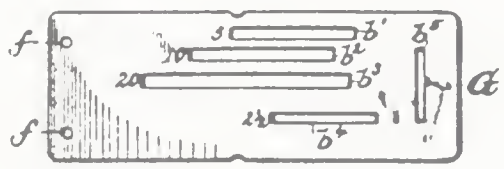
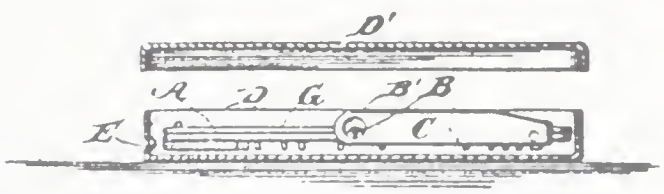


Fig. 4.



Witnesses.

Robert Ewart.

Jos. L. Bowley

Inventor.

Merritt Clarke.

By Chas. B. Tilden

Atty.

UNITED STATES PATENT OFFICE.

MERRITT CLARKE, OF POULTNEY, VERMONT.

COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 273,667, dated March 6, 1883.

Application filed March 10, 1881. (Model.)

To all whom it may concern:

Be it known that I, MERRITT CLARKE, a citizen of the United States, residing at Poultney, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Instruments for Detecting Counterfeit Coin, of which the following is a specification.

My invention relates to certain improvements in apparatus for determining the value and genuine character of coin by measurements of thickness, diameter, and weight.

To this end my invention consists, first, in a coin-balance suspended by bearings from folding standards or supports in such a manner that both may fold into the same horizontal plane, and thereby be so far reduced in size as to be easily portable, both standards and balance being received by or contained in a suitable inclosing box or similar device; secondly, in a supplemental balance-plate calculated for testing gold coins only, which is so constructed that it may be applied to or detached from the balance-supports; third, in a novel arrangement of the measuring and coin-supporting slots, whereby economy of space and material diminution of the balancing weight is effected.

Referring to the drawings forming part of this application, Figure 1 is a longitudinal section. Fig. 2 is a plan view. Fig. 3 is a plan view of the balance-plate for gold coin detached. Fig. 4 is a central longitudinal section taken in the plane *x x*, Fig. 2, showing the manner in which the several parts are folded.

A in said drawings indicates a flat metallic plate, which may be constructed of brass, copper, or any other suitable metal, and of any desired dimension, although I have found by experience that a plate having a length of two and one-half ($2\frac{1}{2}$) inches and a breadth of seven-eighths ($\frac{7}{8}$) of an inch will fully answer the purpose. In such a plate I form slots longitudinally arranged, but of varying length and width, as shown at a', a^2, a^3, and a^4, Fig. 2, together with a transverse slot, a^5, to receive and measure silver coin of the several dimensions, as well as the nickel piece having a value of five (5) cents. These slots are cut with such accuracy as to afford a conclusive test of genuine coin, so far as the diameter and thickness of said coin is concerned, the length of each slot being such that it will admit a genuine coin until the upper edge or surface line of said slot shall cut the central point of the coin introduced, and thereby test its diameter, while at the same time its thickness is measured by the width of the slot. Each slot formed in the plate is provided at its ends with short lips or tongues *b b*, turned down from the metal of the plate A and depending from its under side. These lips are bent slightly toward each other in such manner as to grip the edges of the coin at the point where the surface-line of the slot cuts through the center of said coin, the latter being thereby supported in place until its weight is determined.

The plate A is provided with bearings B B, projecting from its sides at a point a little to one side of the center of said plate. These bearings are provided with knife-edges, and are received and supported by standards C C, each having a recess, B′, formed in its extremity, and adapted to receive the journal or fulcrum bearing of the plate A. These standards C C are pivotally attached to a platform, D, which may be made in the form of an open box of shallow depth, as shown, or in any other suitable style of construction. As the point of attachment of said standards is at or near one end of the support D, it is evident that by simply turning the pivoted standards down they may be folded, together with the balance-plate which lies between them, into substantial parallelism, and be thereby caused to lie within the support D, as shown in Fig. 4.

To one end of the plate A is attached a small weight, E, which serves to balance the coins as they are severally introduced. It is attached to the plate by riveting, and serves as a test-weight for coins of all the denominations now in use. It will be noticed that, with a single exception, the longitudinal slots in the plate A pass the fulcrum-bearings B B, each one of the three larger openings—viz., a', a^2, and a^3—lying partly upon one side and partly on the other side of said bearing-points. It is evident, therefore, that when a coin is placed in any one of said openings a certain portion of said coin will counterbalance an equal portion of the same coin lying upon the opposite side of the fulcrum-point. By this arrangement it will readily be seen that a part only of these

coins will be balanced by the weight E; but with ordinary accuracy in construction this test may be made extremely delicate, being even more sensitive than it would be if the entire weight of each coin were to be counterbalanced by a corresponding test-weight upon the opposite end of the plate. A convenient construction is to make the supporting-platform in the form of a shallow box, which may be provided with a cover, so that the entire device may, when folded, be inclosed by and carried in the vest-pocket, or, if desired, may be permanently set up upon an office-desk or counter, as shown in Fig. 1. In any form of construction it is necessary that the standards, when unfolded, shall occupy substantially a vertical position, in order that they may not be struck by the balance-plate as it vibrates. In order, therefore, to determine the proper position and to retain the standards therein, I employ the following construction: Said standards C C are connected at their lower ends by a plate, F, by which they are held in parallelism, said standards being so pivoted to the box that the plate F swings just above the floor thereof, the arrangement of the parts being such that as the standards are folded or unfolded its lower edge has friction upon the floor of the support D. This prevents the accidental dropping of the standards; and in order to determine their vertical position and to more effectually retain them therein I may form with a small punch a burr, *d*, in the vertical sides of the box D, each burr being so situated that when the standards are in a vertical position their edges are just clear of said burrs, as shown in Figs. 1 and 2. These burrs therefore serve both to determine the proper position of the standards as well as to sustain them more effectually in such position, sufficient friction being produced by the contact of the standards with said burrs to prevent their folding until sufficient pressure is given to overcome said friction.

The apparatus as thus described is adapted for testing silver coins and nickels only. To adapt it for use in testing gold coin, I provide a thin removable or supplemental plate, G, (illustrated in Fig. 3,) which in essential respects is very similar to the plate A. The slots or openings in the plate G are specially adapted, however, to testing gold coin of the several standard denominations, and the whole is so constructed that it may be laid upon the balance-plate A and adjusted in proper position. When so placed the slots in the plate G so far coincide with the openings in the plate A that coins placed in the former will pass down freely through the latter, the openings in the plate G being of less dimensions than those in the plate A. Moreover, the lips depending from the ends of the slots in the gold-testing plate will readily pass through the slots in the plate A, thereby allowing the former to lie flat upon the latter, it being held in proper position by pins or nipples *e e*, which engage with small perforations *f f* in the plate G. It will be seen that as the same weight or counter-balance E is used for both metals the position of the openings in the supplemental plate must be somewhat modified to compensate for the difference in weight between gold and silver. This difference in relative position is much less, however, than would be supposed, and rendered practicable by the greater length of the openings in the plate A. The relative arrangement of the openings in the two plates is shown approximately in Figs. 2 and 3.

It is evident that, instead of being adapted to lie upon the plate A, the gold-testing plate G may be provided with bearings similar to the bearings B B, and as the plate A may be readily dismounted by springing the standards C C slightly apart the plate G, having such bearings, might be readily mounted in its place. In the end of each plate opposite the test-weight I cut a transverse slot, (shown at a^5 in Fig. 2, and at b^5 in Fig. 3,) the former being adapted to receive and test the silver dime and the latter to receive and test the gold dollar.

The manner of using the apparatus is shown in Fig. 1, wherein the dotted lines indicate a genuine silver dollar placed in its appropriate slot. It will be seen that the length of said slot accurately gages the diameter of the coin, while its thickness is tested by the width thereof. At the same time the weight E counterbalances the preponderating portion of the coin upon the opposite side of the fulcrum-points B B.

It should be noted that coins of different dates do not always give the same weights or measurements, partly owing to loss by wear and partly to a slight difference in the amount of alloy. No difficulty will be found, however, in instantly determining the genuine from the counterfeit or from coins that have been filled or otherwise tampered with.

It will be noticed that the bearings B B are slightly raised above the upper surface of the plate, as shown in Fig. 1. They also have a true "knife-bearing." By this construction the proper poise of the plate is preserved and the weight-test is rendered extremely delicate.

In the apparatus thus described I provide a delicate and accurate test for determining the genuineness of coins of both metals and of all denominations. Its size is such that it may readily be carried in the vest-pocket; or it may be permanently erected upon an office-desk. The economy of space I effect by the peculiar arrangement of the slots in the test-plates, and also by causing the parts to fold into substantial parallelism, as shown in Fig. 4. The arrangement of the openings in the plate also promotes the accuracy of the weight-test, since part of each of the three larger coins is counterbalanced by a corresponding portion of said coin lying upon the opposite side of the fulcrum-points, thus leaving a small portion, comparatively, to be counterbalanced by the test-weight E. The degree to which the size and weight of the apparatus

are diminished by this construction will be readily perceived.

In the case of new coins which have not been subjected to use, it will be found that the milling occasionally leaves the edge of an unequal thickness, and that such coins will enter the measuring-slots with a little difficulty. With a little care, however, and by turning the coin, no difficulty will be experienced in determining its dimensions.

It is well, in using the apparatus, to introduce all coins with the date downward.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A coin-balance suspended in folding standards or supports, the latter being pivoted to a platform or receiving-box, whereby the parts may be folded into substantial parallelism, as and for the purpose described.

2. In a coin-balance adapted to test silver coin and nickels, the combination, with the balance-plate, of an attachable supplemental plate having openings adapted to determine the legal dimensions of gold coins, the latter being supported at the same time in said openings, for the purpose of determining their weight, substantially as and for the purpose described.

3. In an apparatus for testing coin, a balance-plate having openings of such size as to admit coins of different denominations, and thereby test their diameter and thickness, part of said openings being arranged longitudinally in said plate, and projecting upon both sides of a line drawn through the fulcrum-points of said plate, whereby a fractional portion of each coin upon one side of said line counterbalances a corresponding portion of the same coin upon the opposite side of said line, thereby leaving only a part of the coin to be balanced by the test-weight, substantially as and for the purpose described.

4. The combination, with the balance-plate having one or more measuring-openings, of a second adjustable plate having openings which so far correspond with those of the balance-plate as to permit the former to be applied to or mounted upon the latter for the purpose of testing coins of a different metal by means of the same balance, substantially as and for the purpose described.

5. The combination, with the folding standards in which the balance-plate is mounted, of a box to which they are pivoted, and within which said standards are adapted to fold together with the balance-plate supported by them, the several parts folding into substantial parallelism, as and for the purpose set forth.

6. The combination, with the folding standards which support the balance-plate, of a receptacle which serves as a platform or support, burrs or equivalent projections being formed upon the vertical sides thereof in such a position as to have frictional contact with the folding standards until the latter attain a substantially vertical position, as and for the purpose set forth.

MERRITT CLARKE.

Witnesses:
MARION P. CLARK,
EDWARD CLARK.

(No Model.)

W. W. HAAS.

COIN COUNTER AND TESTER.

No. 314,330. Patented Mar. 24, 1885.

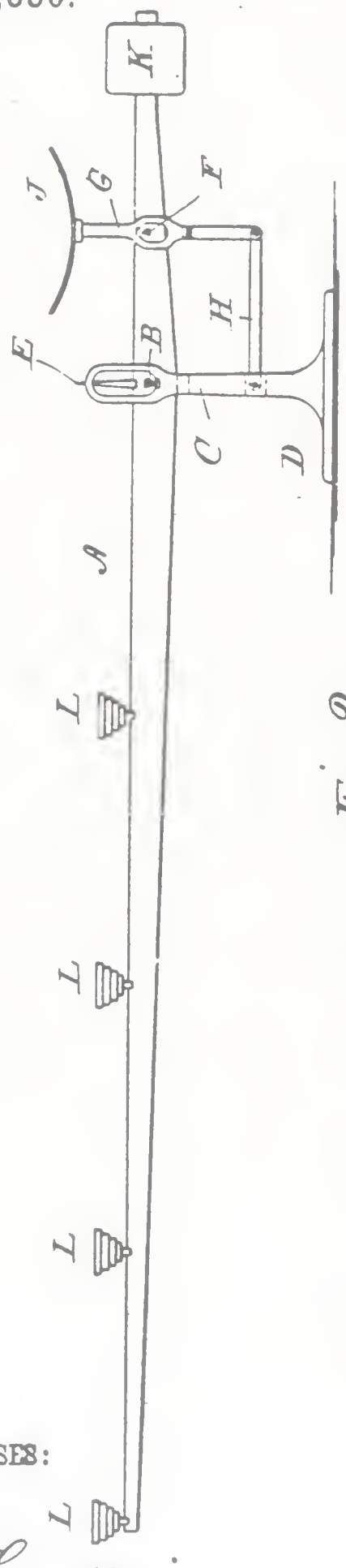


Fig 1.

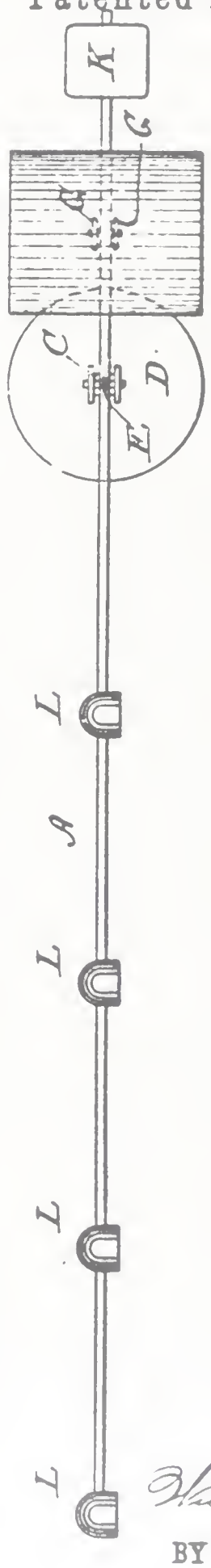


Fig 2.

WITNESSES:

J. Cork.

Chas. Lurcott

INVENTOR:

William W. Haas

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM W. HAAS, OF FARMER CITY, ILLINOIS.

COIN COUNTER AND TESTER.

SPECIFICATION forming part of Letters Patent No. 314,330, dated March 24, 1885.

Application filed September 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. HAAS, of Farmer City, in the county of De Witt and State of Illinois, have invented a new and Improved Coin-Counter, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved coin balance for facilitating the counting of coins of all kinds.

The invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a longitudinal elevation of my improved coin-counter. Fig. 2 is a plan view of the same.

A long beam, A, provided near one end with knife-edge pivots B, rests upon a standard, C, having a suitable base, D. The beam has an upwardly-projecting tongue, E, at the pivots. The short end of the beam, which is considerably shorter than the long end, is provided with two laterally-projecting pivots, F, at about half the length of the short arm from the standard C, and on the pivots an upright bar, G, is pivoted, having its lower end connected by a link, H, with the standard. On the upper end of the bar G a receptacle, J, is placed and properly secured.

A balance-weight, K, is held on the short end of the beam, so as to balance the long end.

On the long end of the beam A four cups, L, are secured, which taper toward the lower ends, and are each provided with a series of offsets. At the top the cups are large enough to receive a twenty-dollar gold piece or a silver dollar, and at the bottom they are adapted to receive a ten-cent piece. The cups are open at one side, so that the coins may be grasped by the thumb and forefinger, or may be pushed out through the open side by a finger of the operator. This improvement allows of the ready removal of the coin, as it is not necessary to first raise the coin by means of the finger-nail or a pointed instrument in order to grasp it with the forefinger and thumb, as in some prior constructions. The first cup L is such a distance from the fulcrum that it will raise five times its own weight on the receptacle J, the second that it will raise ten, the third twenty, and the fourth forty times its own weight on the receptacle J.

The operation is as follows: If a number of quarters are placed on the receptacle J, and it requires two quarters in the fourth cup from the fulcrum, one in the third cup, and one in the second cup, the number of coins on the receptacle J will be equal to $40\times2+1\times20+1\times10-110$ quarters, equal to $27.50. Dollars, eagles, double eagles, &c., are all counted in the same manner.

The unit of weight is the weight of one of the coins to be weighed.

It is not absolutely necessary that the coins should be used as weights, as weights can be substituted if they are equal in weight to the proper weight of the different kinds of coins.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A coin-counter consisting, essentially, in the standard C, the beam A, pivoted thereto to form a long and a short arm, graduated open-sided cups L on the upper edge of the long arm, and weight K on the short arm, the bar G, pivoted to the short arm of the beam, between the weight and the standard, the link H, pivoted to the lower end of the bar G and to the standard, and the receptacle J on the upper end of the bar G, substantially as set forth.

2. In a coin-counter, a coin-cup, L, tapered from the top to the bottom, provided with offsets and open at one side, substantially as herein shown and described.

WILLIAM W. HAAS.

Witnesses:
GEO. COLLINS,
J. W. MORELAND.

(No Model.)

R. W. RIESS.

COMBINED PENCIL HOLDER, ERASER HOLDER, AND COIN TESTER.

No. 549,534. Patented Nov. 12, 1895.

Fig: 1

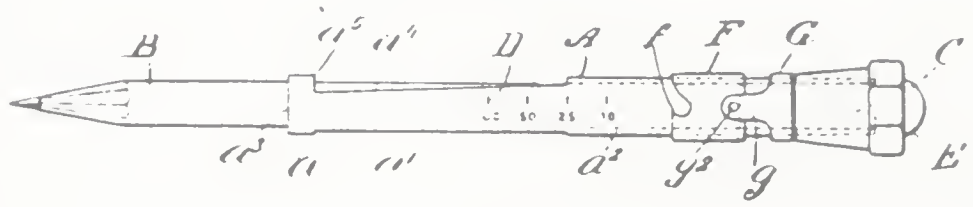


Fig: 2

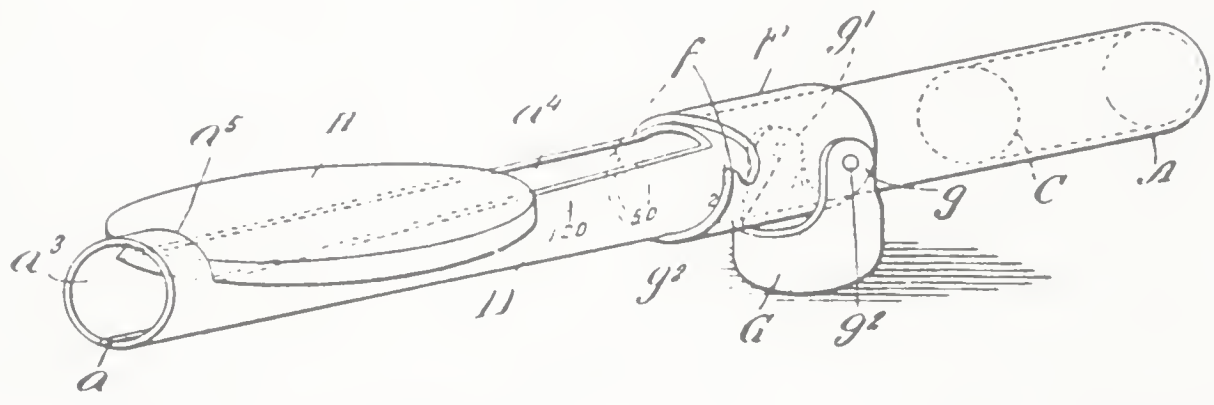


Fig: 3

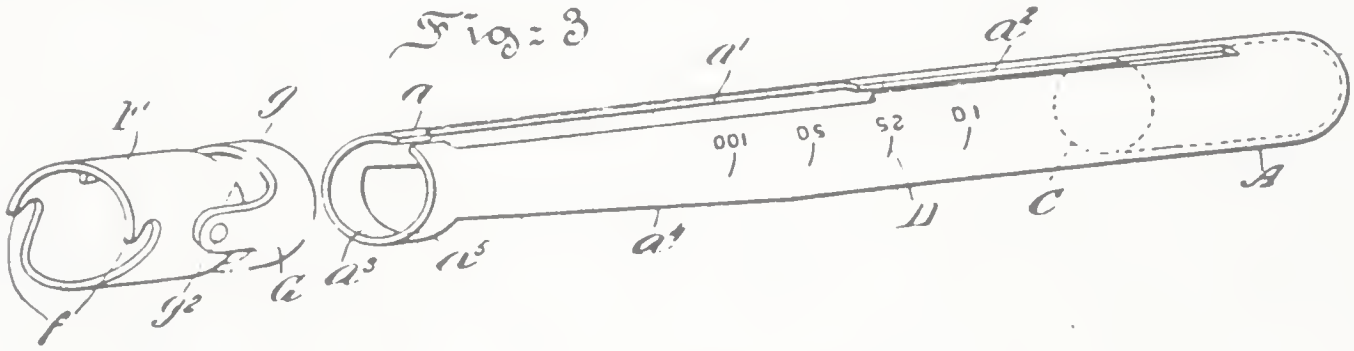
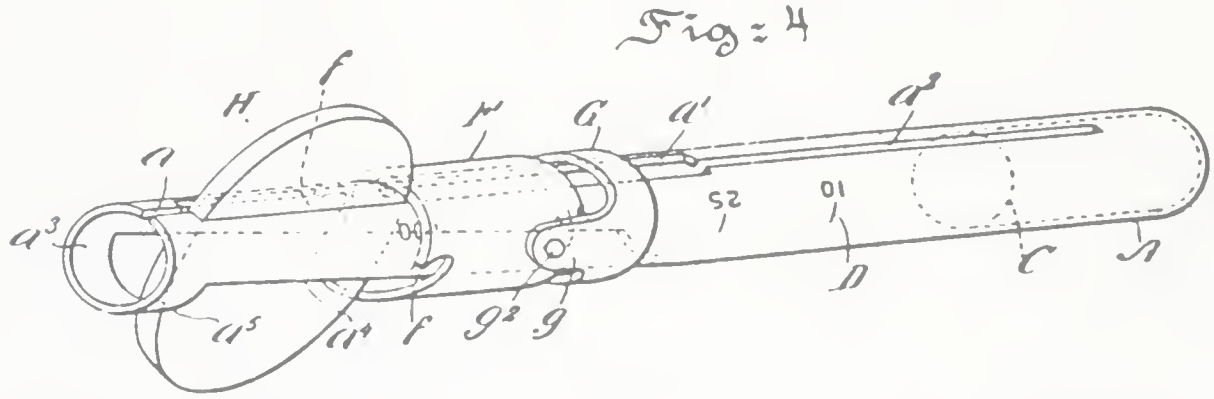


Fig: 4



Witnesses:
Richard E. Harrell
Louis Hinterlugger

Inventor.
Rudolph W. Riess,
By J. Walter Douglass
Attorney.

UNITED STATES PATENT OFFICE.

RUDOLPH WM. RIESS, OF PHILADELPHIA, PENNSYLVANIA.

COMBINED PENCIL-HOLDER, ERASER-HOLDER, AND COIN-TESTER.

SPECIFICATION forming part of Letters Patent No. 549,534, dated November 12, 1895.

Application filed April 3, 1895. Serial No. 544,233. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH WM. RIESS, a citizen of the United States, residing at Philadelphia, (Germantown,) in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Holder for a Writing Implement and an Eraser and Counterfeit-Coin Detector, of which the following is a specification.

My invention has relation to a pocket device comprising a holder for a writing implement, such as a pen or pencil, an eraser, and a counterfeit-coin detector, having adjustable means for establishing a scale for weighing, so as to determine the genuineness or spurious character of coin of different denominations, and in such connection it relates more particularly to the general construction and arrangement of the parts of the device for said purposes.

The principal object of my invention is to provide a simple, durable, and efficient pocket device for holding a writing implement and an eraser, and also adapted to be readily adjusted, so as to form a scale for readily weighing coin of different denominations as well as determining the genuineness or spurious character thereof.

My invention, stated in general terms, consists of a combined holder for a writing implement and an eraser and a coin weighing and counterfeit detector constructed, arranged, and adapted for use in substantially the manner hereinafter described and claimed.

The nature and general features of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevation of the holder with a writing implement mounted in one end, an eraser secured to the other end, and a notched sleeve with its pivotal trunnion mounted on the holder, but adapted to be so manipulated as to become a standard for the graduated scale or beam for the reception of coin of different denominations by shifting the trunnion and therewith the notched sleeve on said holder. Fig. 2 is a perspective view of the oblong slotted hollow holder for the writing implement as well as the eraser, both removed therefrom and with the slidable sleeve of the holder and its pivotal trunnion or standard in a position to establish a beam-scale, with a coin applied to the slotted portion for weighing the same, the shifting of the position of the standard and notched ended sleeve on the graduated holder adapted to accommodate coins of different weights and to overcome the counterweighted end of the holder, so as to accurately determine the genuineness or spurious character of the coin. Fig. 3 is a similar view of the under side of the holder, with the sleeve and its pivotal trunnion or standard removed from the holder; and Fig. 4 is a similar view of the under side of the holder, showing the guideway for the introduction of coin of different denominations for determining the genuineness of the same or the spurious character thereof, and which guideway as to the reception of coin of different denominations is controlled by said sleeve slidable on the holder, according to the graduations thereof, to permit of the coins passing therethrough.

Referring to the drawings, A is a metal or other tube or cylinder having the narrow oblong slot a on the under side merging into an oblong guideway a' and terminating in a narrow slit a^2. The guideway a' is provided for the purpose of inserting coin of different denominations, and the length of the slot is controlled by a slidable sleeve with a pointer directed to a scale on the holder, which governs the size of the slot by the movement thereof to permit of the insertion of the different coins, and thereby to readily determine whether the coin is genuine or spurious, the latter type of coin being generally more bulky or thicker than a genuine coin. Moreover, this guideway merges into the slits a and a^2, to afford the means of required expansion of the holder to permit of the insertion of a pencil or pen B into the forward end a^3 of the holder, as clearly illustrated in Fig. 1 of the drawings.

In the upper surface of the holder A is provided an enlarged slot a^4, as clearly illustrated in Figs. 1 and 2, with walls tapering to the front end and terminating in an arched projection a^5, and, as viewed transversely of the holder, forming a rest thereat for coin of

different denominations applied to the walls of the tube or cylinder for effecting the weight thereof, and thereby to determine the genuineness or spuriousness thereof, to be presently more fully explained.

The rear portion of the holder A is internally weighted by the insertion of a solid metal plug C into the tube or cylinder. The side or surface of the tube or cylinder A is provided with a graduated scale D on each side or surface to denote one dollar, fifty, twenty-five, ten cents, &c., in silver, and on the other side for gold coin of different denominations.

E is an ink or pencil eraser, of suitable shape or form, detachably applied to the weighted end of the holder A, as clearly illustrated in Fig. 1 of the drawings, and at the other or slotted and slitted end of the holder is inserted the pencil or other writing implement B, as also clearly illustrated in Fig. 1.

F is a sleeve fitting the exterior surface of the holder A and adapted to be slid thereon. This sleeve on each side is provided with a notch having a point *f*, and serving as a pointer for the graduated scale of the holder A. This sleeve is provided with a trunnion G, the arms *g* and *g'* of which, by means of rivets or pins g^2, are connected with said sleeve F and constitute the sliding standard G of the coin-weighing device. In an inoperative position the standard and its sleeve occupy the position illustrated in Fig. 1, while in operative position they respectively assume the position shown in Fig. 2, and the sleeve is adapted to be slid along the holder about the scale with the pointer *f* directed thereto and so that the holder may receive at the forward tapering portion thereof the coin H, as illustrated in Fig. 2, overbalancing the rear weighted end of the holder by the coin depressing the same, so as to assume the position illustrated in Fig. 2, at an angle to a horizontal plane to denote the genuineness thereof; but if a counterfeit, the weighing device thus established by the holder with the sleeve and its pivotal trunnion properly positioned will not overbalance the weighted end of the holder, whereby at once the spuriousness of the coin can be readily detected. By shifting the sleeve on the holder according to the scale with the pointer *f* of the sleeve in each instance directly opposite to the numeral of the graduated scale of the holder a coin corresponding to the numeral indicated on the scale can be quickly and reliably detected as to whether genuine or not.

It may be here remarked that spurious coins are usually of greater thickness than the genuine coin, in order to secure required weight, and these can be detected by introducing the same through the guideway *a'* of the slotted holder after having adjusted the sleeve of the holder according to the scale thereon to permit of a passage of the same through the said guideway.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A combined holder for a writing implement and eraser and weighing device for coins, consisting of a tube or cylinder open at one end for the reception of the writing implement, weighted at the other end and having an eraser applied thereon and a sleeve with a pivotal standard for establishing a weighing device for coin of different denominations, substantially as and for the purposes set forth.

2. A holder for a writing implement and weighing device, comprising a graduated scale tube or cylinder provided with an oblong slot for inserting coin therethrough and with a tapering surface forming a rest for the coin and a slidable sleeve on said tube or cylinder and having a pivotal trunnion forming in operative position a vertical standard for the weighing device, substantially as and for the purposes set forth.

3. A holder for a writing implement and weighing device, comprising a slotted counterweighted and graduated scale tube or cylinder with a guide-way for inserting therethrough coin, oblong slits merging into said guide-way, a removable sleeve mounted on said tube or cylinder and provided with a pivotal trunnion forming in operative position a standard for the weighing device, substantially as and for the purposes set forth.

4. A combined holder for a writing implement and weighing device, comprising a graduated or scaled cylinder open at one end and weighted at the other end and having an intermediate guide-way and a coin rest, a sleeve provided with a pointer and a movable trunnion connected with said cylinder and slidable thereon, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

RUDOLPH WM. RIESS.

Witnesses:
CHARLES H. WEISS,
WM. H. EMHARDT, Jr.

95

A. J. BAKER & J. W. SIMONTON.

Device for Detecting Counterfeit Coin.

No. 202,691. Patented April 23, 1878.

Fig. 1.

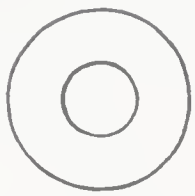


Fig. 2.

Witnesses:
John O'Donnoghue
E. H. Bradford

Inventors:
Aaron J. Baker
John W. Simonton
By H. J. Ennis
Attorney

E. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AARON J. BAKER, OF EDINBURG, AND JOHN W. SIMONTON, OF TAYLORSVILLE, INDIANA.

IMPROVEMENT IN DEVICES FOR DETECTING COUNTERFEIT COIN.

Specification forming part of Letters Patent No. **202,691**, dated April 23, 1878; application filed January 7, 1878.

To all whom it may concern:

Be it known that we, AARON J. BAKER, of Edinburg, in the county of Johnson, and JOHN W. SIMONTON, of Taylorsville, in the county of Bartholomew, all in the State of Indiana, have invented certain new and useful Improvements in Detecting Counterfeit or Spurious Coin and Metals; and we do hereby declare that the following is a full, clear, and exact description of our invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan, and Fig. 2 a sectional view, of the invention.

This invention relates to improvements in devices for detecting spurious gold and silver coins, and in the improved construction of the same, and manner of applying the test, hereinafter more fully described, and particularly pointed out in the claim.

The invention consists of a circular or other suitably-shaped piece of zinc, provided with an opening in the center, the manner of operating the same being to place the test upon the coin to be tested and applying the tongue to the coin through the opening in the center of the piece of zinc, and if the coin is pure, or nearly so, a very perceptible electric shock, accompanied by a decided metallic taste, will be experienced, which shock and taste diminish in intensity in proportion as the coin is alloyed with the baser metals, it being a well-known fact that to produce galvanic action it is only necessary to form what is called a "galvanic circle"—that is, a certain order of substances capable of exciting electricity.

The electrical effects of a simple galvanic circle are in general too feeble to be perceived, except by very delicate tests. However, the tongue and other sensitive parts of the body, being very easily affected, afford a simple and convenient mode of putting the process in operation.

The most convenient shape for a coin-tester of this description is a disk having a central opening, the circular form having no projections to wear holes in the purse or pocket, and the central opening presenting the largest amount of surface in the most convenient manner for the purpose specified.

In this test, although the quantity of electricity set in motion is very small, it is quite sufficient to produce very considerable effects; hence the great desirability and convenience of the above manner of testing coins, involving no complicated balances or delicate instruments of any kind, it being easily operated by a child, or even those people deprived of sight, who could not use any of the tests ordinarily applied in such cases.

Having thus described our invention and the process involved of testing coins, what we claim as new and useful, and desire to secure by Letters Patent, is—

A coin-tester consisting of a disk of zinc having an opening in the center, substantially as and for the purpose specified.

In testimony that we claim the foregoing as our own we hereby affix our signatures in presence of two witnesses.

AARON J. BAKER.
JOHN W. SIMONTON.

Witnesses:
ROBERT W. MEDKIRK,
PETER A. CANARY.

April 11, 1933. F. E. FINCH 1,903,621

COUNT CHECKING DEVICE FOR PACKAGED COINS

Filed May 17, 1930

Fig. 1.

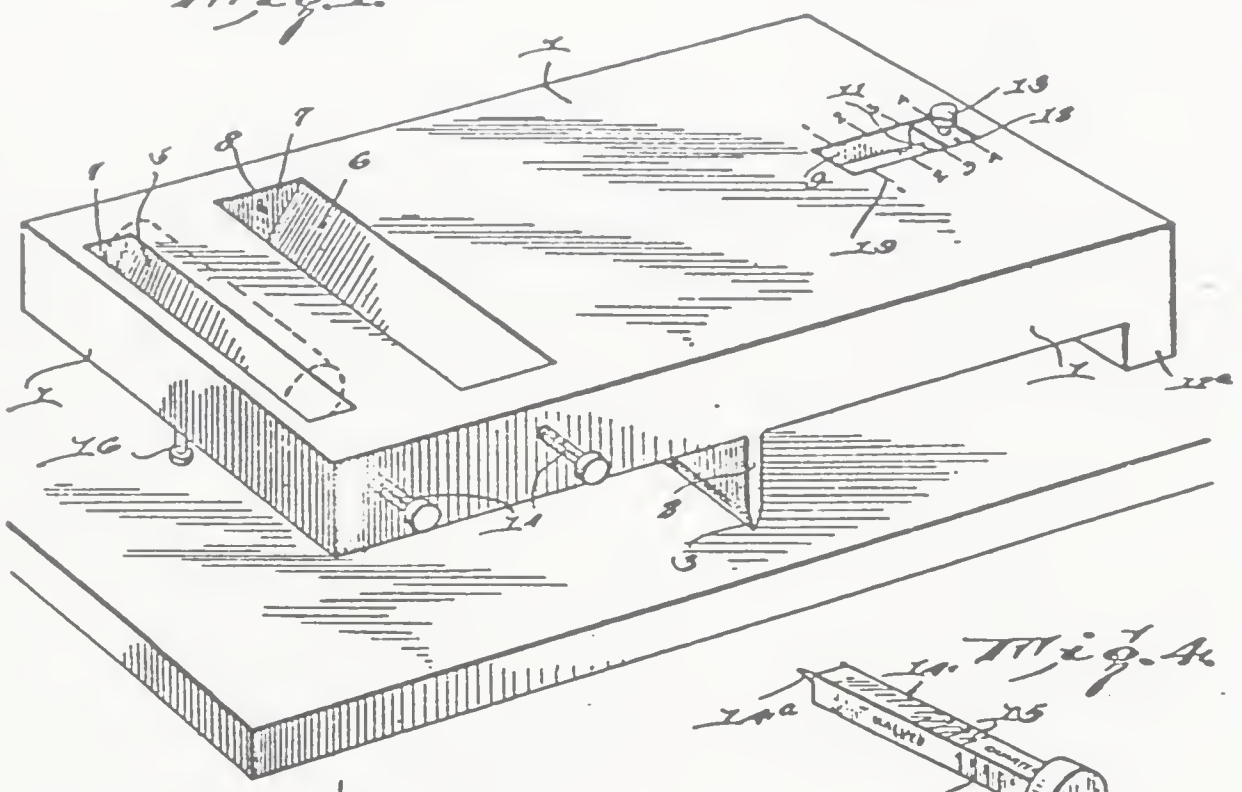


Fig. 4.

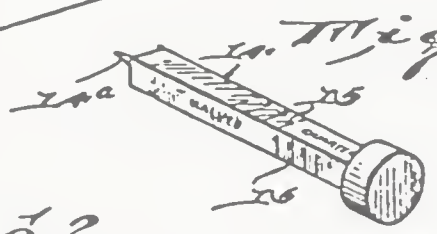


Fig. 2.

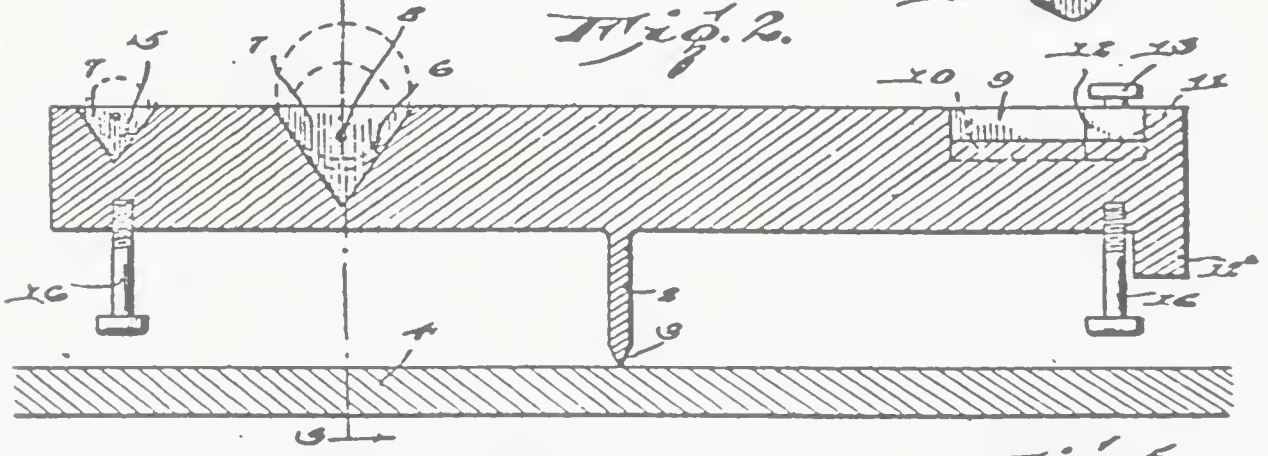


Fig. 3.

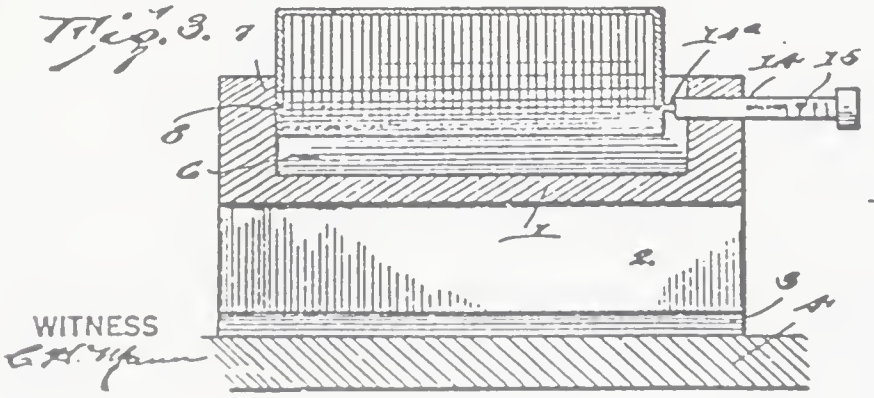
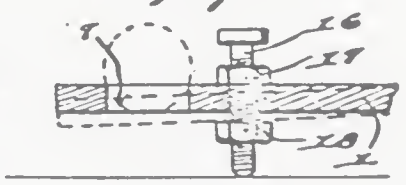


Fig. 5.



WITNESS

INVENTOR
F. E. Finch

BY Munn & Co.

ATTORNEY

Patented Apr. 11, 1933 1,903,621

UNITED STATES PATENT OFFICE

FRED E. FINCH, OF READING, PENNSYLVANIA

COUNT CHECKING DEVICE FOR PACKAGED COINS

Application filed May 17, 1930. Serial No. 453,325.

This invention relates to a device for checking the count of coins in the roll packages universally used today in banking and business and is more particularly concerned with a device for checking the accuracy of the count by weight without unpackaging the coins or disturbing the wrapping; and with due compensation for loss in column height or length, and weight by wear, and with the method involved therein.

Determination of accuracy of count by weight is predicated on the known fact that standard roll packages of new coins have definite weight relation; that the maximum wear in the column of coins in all or practically all standard packages will be less than the weight of one coin; and not more than three coins in the case of dimes; and that the loss in column height or length through wear, due to the absorption of more of the thickness wear by the milled beaded edges of coins, as compared to loss in weight, is substantially as four to one; and that shrinkage in length of a roll column of coins through wear from new column thickness to maximum wear thickness can be precalculated for gauging, and accurately compensated for balance.

United States coins are roll packaged in quantities of fifty "dimes," forty "quarters" and twenty half dollars. The United States fixed relative weight standard of its coins, when new, permits proportioned leverage placement of rolls of different coins relative to a pivotal balance line or point of a coin supporting and weighing table or platform and the proportionate loss of weight to height or length in a standard roll or column of worn coins. permits a proportionate adjustment of a counter balancing weight at the opposite sides of the pivotal edge or point to compensate. Where the loss in column height or length compensated by corresponding proportionate adjustment of the counter balancing weight fails to balance and the roll of coins is overbalanced by the weight adjustment, a shortage of count or inclusion of a smaller and lighter coin will be indicated. When balance is not attained with the proportionate counterbalancing adjustment made and the coin roll overbalances the counterweight, an overcount or excess in number of coins will be indicated or the inclusion of a different coin of coincident or smaller size and greater weight. In such cases, the roll package will require opening, examination and count.

A roll or column length (or height) caliper or gauge bar is used for standard coin roll packages of each denomination calibrated to indicate proportionate divisions or fractions of the maximum permissible loss of length in height, with the calibrations extending from a point indicating the full count of new coins to the point indicating the maximum loss of length or height permissible in a full count of worn coins. If the caliper or gauge may be moved appreciably toward the pivotal point, a short count will be immediately indicated, and the device embodies this quick determining means for obvious shortage as one of its features.

The described features of the invention will be more clearly apparent from the following detailed description which is to be read in conjunction with the accompanying drawing forming part thereof and illustrating one form of the device.

In the drawing:—

Figure 1 is a perspective view of a count checking platform balance embodying the features of the present invention.

Figure 2 is a longitudinal vertical section thereof.

Figure 3 is a transverse vertical section on line 3—3 of Figure 2 with the caliper bar shown in cooperative gauging relation to a roll package of coins, in this instance representing "quarters".

Figure 4 is a detail perspective view of the quarters and half dollar caliper bar.

Figure 5 is a detail section of a modification, illustrating a visual indicator hereinafter described.

In the drawing a flat rectangular plate 1 which may be of any suitable material such as wood, cast aluminum etc., is provided midway of its length with a perpendicular traversing rib 2 or any equivalent pivoting means, said rib having its lower edge beveled to a knife edge 3, and providing a transverse

knife edge balance or balance line. 4 indicates a plane surface, such as a bank counter, desk or table top upon which the knife edge balance may rest.

At one side of the balancing edge, I provide the platform, plate scale or balance thus formed with troughs or receptacles for standard packages or rolls of different coins, these seats having abutments designed to engage one end of the coin roll package. Conveniently, such seats may be formed by V-shaped grooves such as the grooves 5 and 6 shown in Figs. 1 and 2, cut or cast in the top face of the plate 1 with the plate of one end of the groove forming abutments 7 for one end of the coin roll packages seating therein and, since it is desired, in accordance with my invention, to measure the length of the coin column within these packages I provide the end abutment walls 7 with inwardly facing pointed contact studs 8 of predetermined length which will penetrate the material of the coin package and engage the coin at one end of its coin column, thus making it unnecessary to disturb the wrapper of the package.

In order to provide a gauge for determining the loss of weight by wear for a full count of coins of each denomination proportioned to their loss of column length by wear, I have established by experimentation the length of the coin columns of full count packages of coins of different denominations and the maximum loss in length of full count coin columns of the same denominations through maximum permissible wear, and have determined by experiment and calculation that such coin columns lose weight in proportion to loss in column length in the ratio of approximately one to four.

The official standard weight of new United States coins makes the fifty dimes (new) contained in the standard fifty dime roll package equal in weight to twenty new quarters and ten new half dollars, and standard roll packages contain forty quarters and twenty half dollars, each, when new, weighing twice as much as the fifty new dimes. In view of this fact, I have selected the dime package as a basis of calculation and balance. The coin trough 5 is intended, in the illustrated form of my device, to seat the standard dime roll package. At the opposite side of the knife edge balance or other pivotal point of device there is provided an elongated recess 9 which, in the event of the plate 1 being made of thin metal, might well be substituted merely by a slot. The recess 9 extends longitudinally of the plate 1. The base of the recess is provided with a longitudinal rib 10 which is straddled by the bifurcated lower face 11 of an auxiliary counter weight 12. This fits the sides of the recess rather closely and has an upstanding thumb hold 13 by which it is moved back and forth.

The weight 12 supplements a permanent counter weight 12^a which is made integrally with the plate 1 in any suitable manner. This main or permanent counter weight is but little less in weight than a column of fifty new dimes, which column is herein taken as a standard. The actual counter balancing action is accomplished by the auxiliary counter weight 12, and by virtue of the near balance which is arrived at by the main counter weight 12^a it becomes possible to space the calibrations 19 (Fig. 1) rather far apart so that considerable leeway is allowed in making the adjustments of the auxiliary counter weight in determining a coin count.

In other words, were it not for the main counter weight 12^a and the stated function which it performs, all of the balancing action would rest with the auxiliary counter weight 12 with the consequent disadvantage of having the readings along the scale 19 so narrowly spaced as to make it difficult to place the auxiliary counter weight at its settings. In practice the recess 9, or slot if that be used, will be appreciably longer than indicated. The distance between the graduations 19 will also be appreciably greater. The result is that the counter weight may be moved back and forth in proximity to the various graduations with utmost freedom without the operator having to constantly be on guard for the "breaking point" of the scale. This feature works out in practice to the extent that as much as a $\frac{1}{2}''$ variation will be allowed on either side of a given graduation, thus taking into account any possible variation in coin thicknesses and column weights, or in other words combinations of old and new coins in a different package. The quarter and half dollar trough 6, designed to hold standard packages of forty quarters and twenty half dollars, whose weight when new, is each twice that of the fifty new dimes, is like the dime trough in parallel to the knife edge blade 2 and is centered on a line exactly half way between the center line of the dime trough 7 and the line of the knife edge 3 so that the leverage against the weight 12 being reduced to half, the counter weight 12 in its normal position alined with calibration "4" will also balance the forty new quarters and twenty new half dollars of such standard packages. Obviously troughs for other coins may be provided, centered on that line parallel to the knife blade 2 and troughs 5 and 6 predetermined by the proportionate weight of its full count of new coins to that of the full count of new dimes, the length of the plate 1 and position of the counter weight, of course being predicated on the number of troughs used, and on the weight of plate 1 at the coin trough side of the balancing knife edge.

The calibrations 19 edging the slot 9 may be sub-divided as suggested in Fig. 1 and the top face of the counter weight 12 may have a registering line such as shown, or a pointer.

The counter edge face of the scale plate 1 in line with the coin package troughs which as shown, terminate inwardly of said edge, is bored horizontally through on the longitudinal axes of the troughs to receive and guide caliper or gauge rods or bars 14, preferably rectangular in cross section to provide a plurality of faces for calibrating and having their inner ends provided with axially and inwardly extending pointed prongs 14ª of determinate length to penetrate the material of the coin package and contact the outer end coin of the coin column therein, the inner end coin being similarly contacted by the pointed ends of studs 8 at the opposite ends of the troughs. As a variation of this arrangement the calipering may be accomplished by merely graduating one or both edges of the coin troughs or receptacles a distance back from one end agreeing with columns of new and variably worn coin columns.

The lengths of the coin columns in respect to the extremes of full count new coins and full count worn coins of maximum permissible wear, are indicated by calibrations 15 determinately located on a face of the gauge bars 14 and indicating with reference to the outer edge face of the plate 1, the length of the coin column of a package with respect to proportionate degrees of loss of column length through wear up to the maximum permissible loss by wear of a full count of the particular denomination of coin.

Where, as in trough 6, packages of coins of different denominations, quarters and half dollars, are to be seated, the gauge bar 14 for that trough will have two of its faces differently calibrated, one for each coin denomination as shown in Figure 4. In case the edge graduations are employed in lieu of the bar 14, the marks would be of variable length so that quarter and half dollar denominations are readily distinguishable. It is to be clearly understood that the indication of the gauge bar calibrations, or edge graduations, are to be read in direct combination with the auxiliary counter weight 12 in determining a coin count. The gauge bar is to be regarded as a preliminary or initial checking means on the coins solely for the purpose of establishing the fact that a given column contains new worn or mixed coins. The later adjustment of the auxiliary slidable counter weight 12 will indicate the count of coins in the package when a balance is arrived at. The gauge calibrations 15 are scaled in two or more divisions representing the relation of loss of column length to loss by weight and the calibrations edging the counter weight recess 9 are similarly scaled with the weight leverage position of the counter weight 12 in the scaled position precalculated to offset and counter balance a loss in weight by wear.

The coins of a package, if a full count, should, therefore, balance with the counter weight adjusted to the calibration proportioning the loss of weight to loss of column length and preferably indicated by a corresponding scale numeral. If, on the other hand, the coin column length loss indicated by a calibration 15 is within the maximum permissible length loss, but, the coins in the package are of mixed denomination and weights, the counter weight when adjusted to the calibration indicated by the gauge calibration for full count, will not balance the scale platform but will over or under balance. Thus a determinate accurate check of full coin count is afforded and recount of all coin roll packages is avoided, only those being recounted which gauge calibration or scale weighing indicate "short" or "long". Under balance by the counter weight when properly adjusted will indicate the presence of a heavier coin of substantially similar size and different denomination as for example a foreign coin, or a gold coin, and over balance, similarly a lighter coin.

To facilitate the operation of weighing and prevent excessive tilting on the knife edge balance, or other pivotal point, abutment studs 16 depend from the under face of the plate 1 at joints equidistant from the balancing knife edge. The double "click" or "tap" of these studs on the counter or table will furnish a quick audible signal of balance.

As a variation of the foregoing audible signal of the accomplishment of the balancing arrangement in Figure 5 may be adopted. This is a visual signal. The stud 16 (at the left) is here shown in combination with a thin scale plate 1. It is equipped with jam nuts 17, 18 which are so spaced that when the point of the stud touches the counter or table and is thereby stopped, the remaining movement of the plate 1 to the final and dotted line position will in effect make a departure of the stud 17 from the top face of the plate thus indicating to the observer that the balance has been reached. This arrangement and operation is predicated on a loose mounting of the stud 16. In practice it will be desirable to make the stud as light as possible so that there will be no chance of a false reading.

The device is relatively simple in structure and may be accurately made. Initial balance adjustment having been made, and gauging calibrations checked, there is nothing in ordinary use to breed inaccuracy. The package penetrating coin contacting tips 8 and 14ª may be of or coated with wear resisting material so that their accuracy of measurement will

be maintained. Means of any desired character may be used to fix and detachably maintain the counter balancing weight 12 in an adjusted position so that it will not move as the scale plate oscillates. The particular form of the device disclosed illustrates the operative principle of the invention but is intended merely as illustrative thereof and not restrictive, and may be modified in consonance with the spirit of the invention and the scope of the appended claims.

I claim:

1. A device for checking the full count of standard packages of coins by weight comprising a plate balance scale having a coin package seat thereon having a coin column end abutment, gauge means associated with said seat to initially measure the length of said column, said gauge means having associated calibrations in terms of degrees of permissible loss of column length through wear in a full count of coins of the said selected denomination up to the maximum permissible length wear for full count, and a weight on said plate opposed to said package seat normally positioned therein to counter balance the weight of a full count package of new coins of the selected denomination on said seat, and arranged for adjustment from said normal position to calibration-indicated positions coordinating and counterbalancing proportionate weight loss to the coin column length loss by wear indicated by a gauge calibration.

2. A device for checking the full count of standard packages of coins by weight comprising a plate scale having an intermediate balance point with a coin package seat on said plate at one side of said balance point, a caliper bar mounted on said plate for movement longitudinally of the coin column of a package engaging said seat at one end to engage the other end of said coin column and measure its length, said caliper bar having associated calibrations in terms of degrees of permissible loss in column length through wear in a full count of coins of the denomination being measured up to the maximum limit of wear for full count, and a counter balance on said plate at the side of said edge opposite to the coin package, normally positioned to balance the weight of a full count package of new coins of corresponding denomination and mounted for movement relatively to said balance point from position of full count new coin balance to calibration indicated positions providing counter balancing weight corresponding to the proportionate weight loss indicated by the degree of coin column length loss indicated by said caliper bar calibration reading.

3. A device for checking the full count of standard roll packages of coins by weight comprising a platform balance having a pivotal support, and a coin trough therein at one side of said pivotal support, having an abutment engaging one end of the coin package, a caliper bar mounted on said platform to slide longitudinally of the trough from one end thereof to contact the other end of the coin package and measure the length of the column of coins in said package, said caliper bar having associated calibrations in terms of degrees of permissible loss in column length by wear for a full count of the coins of the denomination being measured and cooperating with said platform to indicate the loss defining calibration, and a counter weight on said platform at the side of said pivotal support opposite to the coin package trough having a normal position relatively to said pivotal support to balance the weight of a full count package of new coins of that denomination in said trough and mounted for counter balance adjustment relatively to said pivotal support and to platform calibrations coordinating loss in weight by wear to the loss in column length by wear indicated by said caliper bar calibrations.

4. A device for checking the full count of standard coin roll packages by weight comprising a plate having an intermediate balance point and a coin roll seat thereon at one side of said balance point provided with a roll end abutment penetrating the roll and engaging the coin at one end thereof, a gauging bar mounted on said plate for sliding movement longitudinally of the coin column and having its inner end formed to penetrate the other end of the coin roll to contact the end coin therein and measure the length of the coin column, said gauge bar having associated calibrations extending from the length point of a full count column of new coins of the denominations being measured, to the length point of maximum permissible wear in said full count column and cooperating with said plate to indicate the degree of loss of length in the coin column by wear, and a weight mounted on said plate at the side of said balance point opposite to the coin roll normally positioned relatively to said balance point to balance the weight of a full count package of new coins of the denomination being measured, said weight being mounted for adjustment from said normal point toward said balance point and relatively to plate calibrations proportioning the coin weight loss compensating adjustment of said weight to the coin column length loss indicated by the gauge bar calibrations.

5. A device for checking the full count of standard roll packages of coins comprising a plate having a transverse intermediate balance line, a dime roll trough in said plate at one side of and in parallel to said balance line and determinately spaced therefrom and having an abutment engaging one end of a dime roll therein, a counter weight on said plate at the opposite side of said balance line

normally positioned thereon relatively to said line to balance the weight of a full count roll of new dimes in said dime roll trough, a combined quarter and half dollar roll trough in said plate extending in parallel to said balance line and located midway between said line and dime roll trough to halve the doubled weight of standard new quarter and half dollar rolls and balance with said counter weight, said trough having an abutment to engage one end of a coin roll therein, caliper bars mounted in said plate for sliding movement longitudinally of the troughs to engage the ends of the coin rolls opposite to the trough abutments and measure the lengths of the coin columns of said rolls, said bars having associated calibrations in degrees of loss in coin column lengths from the maximum of full count new coin length to the minimum of full count worn coin length, said counter weight being mounted for adjusting movement relatively to said balance line, said plate having calibrations thereon cooperating with said counter weight and coordinated to the loss of coin column lengths indicated by bar calibrations to counter balance by calibrated adjustment of said weight the coin column weight loss proportionate to the loss in coin column length by wear.

6. A device for checking the full count of standard coin roll packages comprising a table scale having an intermediate transverse balancing line, a plurality of coin package seats thereon at one side of said balance line for standard coin packages of different denominations, a counter weight on said table at the opposite side of said balance line positioned thereon to counter balance the weight of a full count package of new coins on one of said seats with the remaining coin seats positioned in that leverage ratio to the balance line to equal the weight of their full count coin packages, through proportionate leverages, to that of the first balanced coin package of a different denomination of coin.

7. A device for checking the full count of standard coin roll packages comprising a table scale having an intermediate transverse balancing line, a plurality of coin package seats thereon at one side of said balance line for standard coin packages of different denominations, a counter weight on said table at the opposite side of said balance line positioned thereon to counter balance the weight of a full count package of new coins on one of said seats with the remaining coin seats positioned in that leverage ratio to the balance line to equal the weight of their full count coin packages, through proportionate leverages, to that of the first balanced coin package of a different denomination of coin, means for gauging the coin column lengths of coin packages on said seats and for calibrating in degrees the limits of permissible loss of column length of a full count package through wear from its full count new coin length and means for adjusting said counter weight relatively to said balance line to determine by proportion counter balancing leverage to loss of weight in a full count column of coins through wear to the extent calibrated by said gauging means.

8. In a device for checking the full count of standard packages of coins, a base providing a coin package seat and an abutment to engage one end of the column of coins in a package, and a gauge mounted on said base for movement to contact the opposite end of said coin column to measure its length, said gauge having associated calibrations to indicate the limit of reduced column length by maximum permissible wear of a full count of coins of a specific denomination from the full column length of a full count of new coins of that denomination.

9. In a device for checking the full count of standard packages of coins, a base having a coin seat thereon provided with an abutment to engage one end of a coin package and formed to penetrate the material of said package and engage the coin at one end of the coin column therein, and a gauging bar mounted on said base for movement to contact one end thereof with the opposite end of the coin package to measure the length of its coin column, said gauging bar end being formed to penetrate the material of the package to engage the coin at that end thereof, said bar having associated calibrations to indicate the limit of reduced column length by maximum permissible wear of a full count of the determination of coin being measured from the full column length of the coin column of a full count package of new coins of that denomination.

10. A device of the character described comprising a pivoted plate, means at one end of the plate for receiving a column of coins, a main counter balance at the other end of the plate being slightly less in weight than a given column of new coins of a determined denomination, an auxiliary weight movably mounted on said other end of the plate for producing an over-balancing motion of the plate in the direction of the coin column, and means movably associated with said one end of the plate, being subject to movement at the approximate completion of the overbalancing act thus to provide a visual indication of said act.

11. A device for checking the full count of coin packages comprising a plate having transverse balancing means, a dime package trough in said plate at one side of the balancing means and determinately spaced therefrom, a counterweight on said plate at the opposite side of said balancing means normally positioned thereon relatively to said balancing means to balance the weight

of a full-count package of new dimes in said trough, a quarter and half dollar trough in said plate located midway between said balancing means and the dime package trough, said counterweight being mounted for adjusting movement relatively to said balancing means, said plate having calibrations cooperating with said counterweight.

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June 6, 1944. W. H. PARNELL 2,350,414

COIN TESTER

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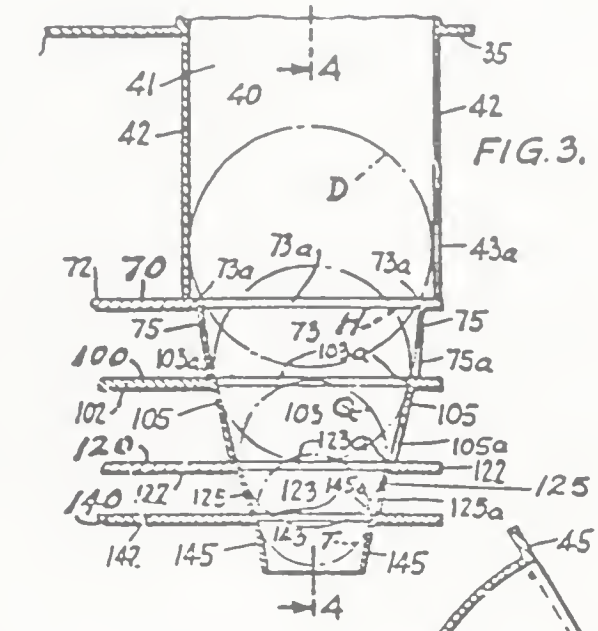

FIG. 3.

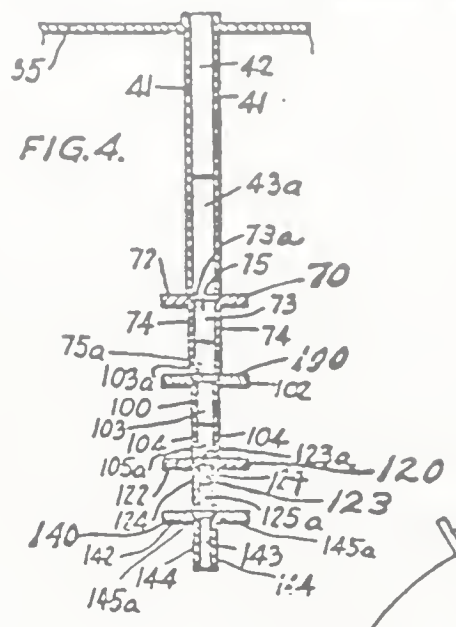

FIG. 4.

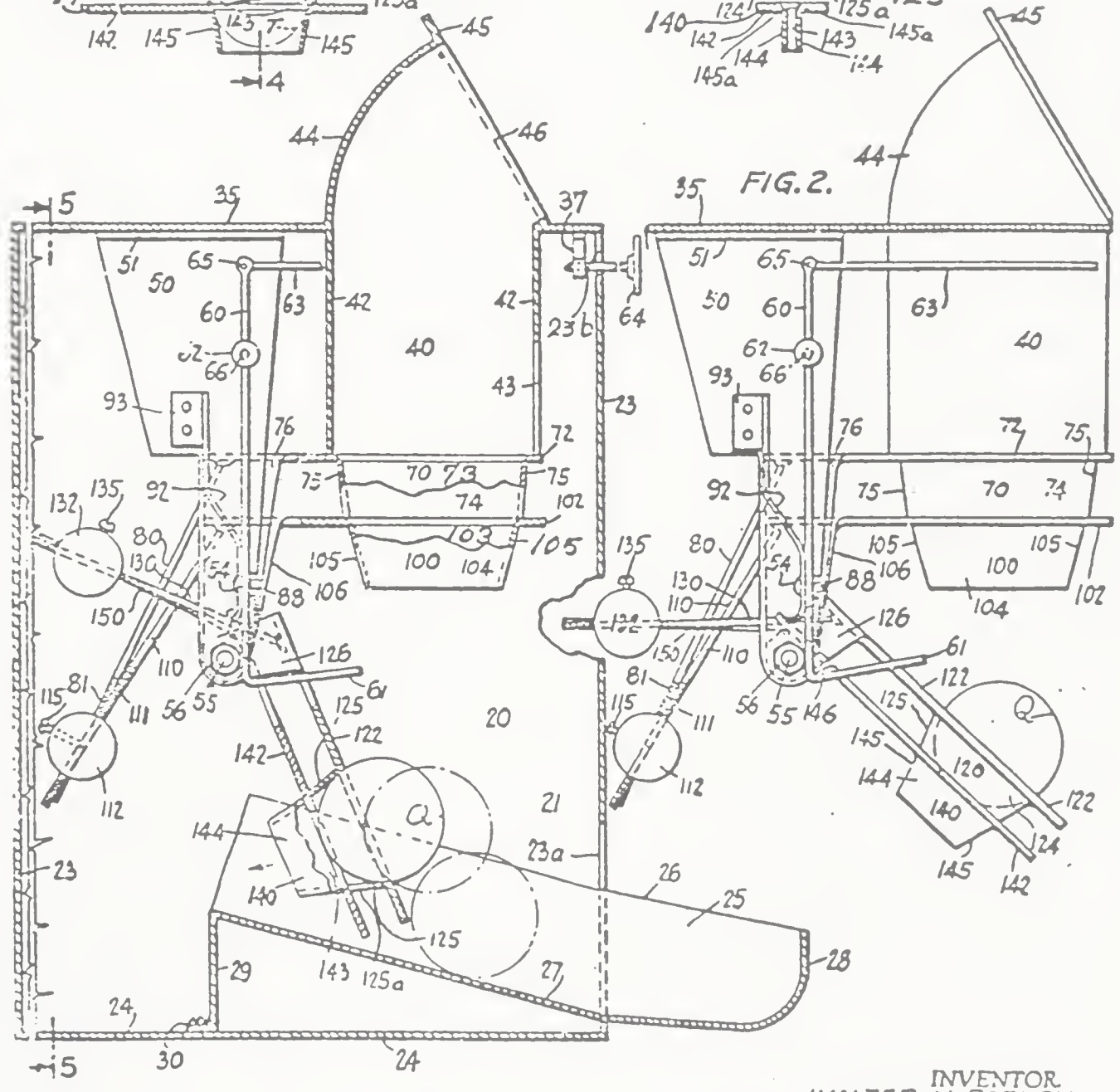

FIG. 1.

FIG. 2.

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COIN TESTER

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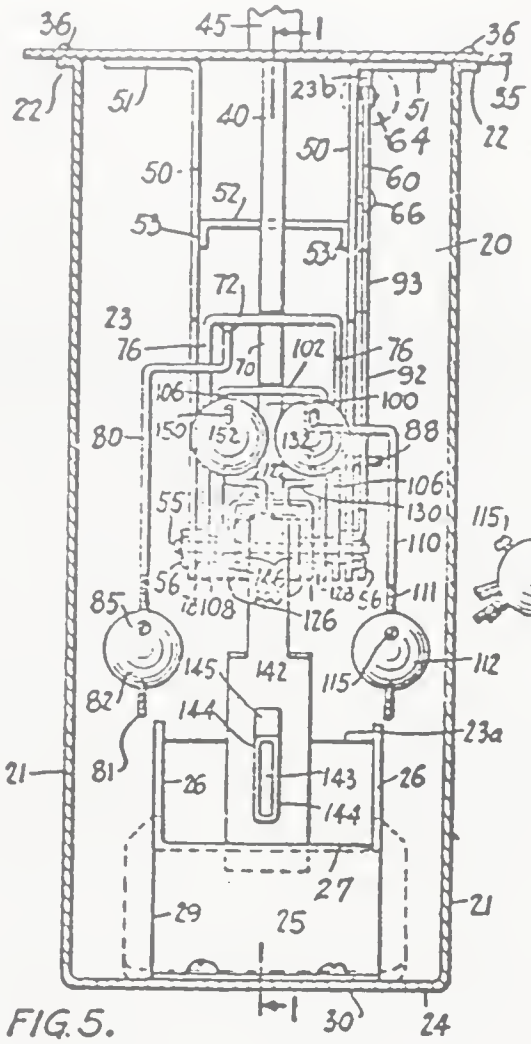

FIG. 5.

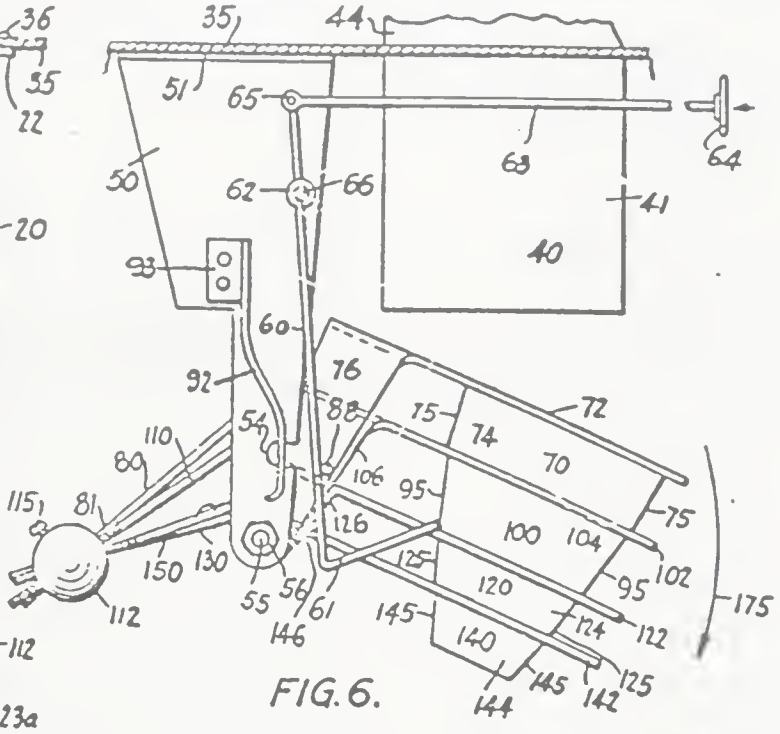

FIG. 6.

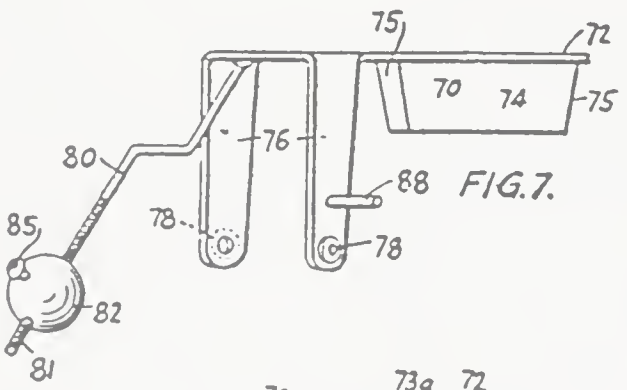

FIG. 7.

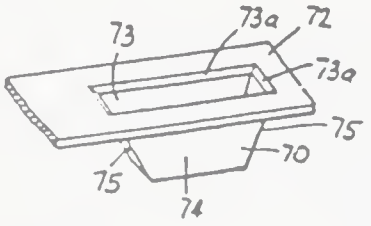

FIG. 8.

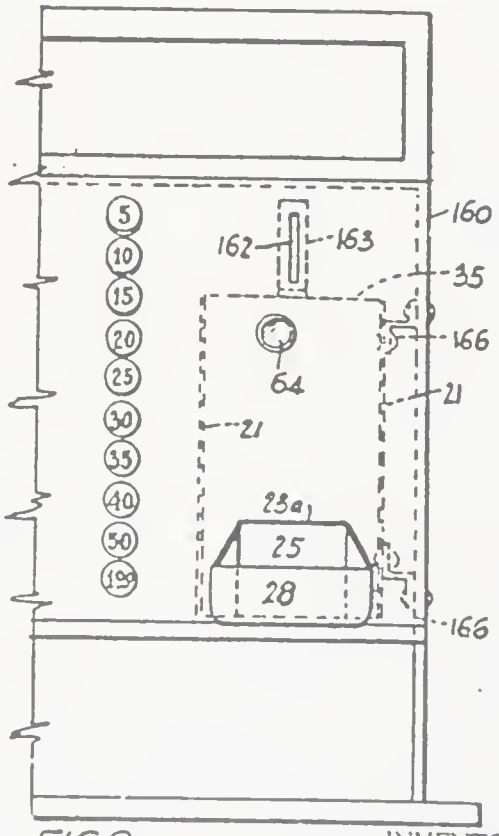

FIG. 9.

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UNITED STATES PATENT OFFICE

2,350,414

COIN TESTER

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Application June 5, 1941, Serial No. 396,689

3 Claims. (Cl. 265—50)

This invention relates to a coin tester.

The object of the invention is the production of a tester, by means of which coins, which are under weight are easily detected.

The second object of the invention is the production of a tester by means of which coins of different denominations can be tested, to indicate whether they are underweight.

The third object of the invention is the production of a coin tester, which can be used independently of other apparatus, and which can be connected to or positioned in other apparatus, such as a cash register.

The fourth object of the invention is the production of a coin tester, which has connected thereto means to easily eject coins therefrom, which are underweight.

The fifth object of the invention is the production of a coin tester, which provides means to quickly detect coins which are underweight.

The sixth object of the invention is the production of a coin tester, which has one inlet conduit for the testing of coins of different denominations.

The seventh object of the invention is the production of a coin tester, which can be readily inspected and adjusted.

The eighth object of the invention is the production of a coin tester, which saves time in providing a quick means to classify coins as to their weight.

The ninth object of the invention is the production of a coin tester with only one inlet opening for a plurality of coins to be tested.

The organization of the invention comprises one or a plurality of levers, into which coins may be dropped to swing them sufficiently when the coins are the required weight to enable the coins to roll therefrom, and which do not roll therefrom when not of sufficient weight.

It is well known that some counterfeit coins weigh less than genuine coins, and the operation of the detector is based upon this fact.

Various other objects of the invention will be apparent from the claims, specification and drawings.

Fig. 1 represents a side elevation of the coin detector and partial section as on the line 1—1 of Fig. 5; Fig. 2 is a view similar to Fig. 1 with some of the movable parts in a different position, and other portions in full lines; Fig. 3 is a partial section of Fig. 5 on the line 1—1; Fig. 4 shows a section of Fig. 3 on the line 4—4 of Fig. 3; Fig. 5 is a partial section of Fig. 1 on the line 5—5 and a left hand view of said Fig. 1; Fig. 6 is a view similar to Fig. 2 with the movable elements in a different position; Fig. 7 represents a perspective view of some details; Fig. 8 indicates a portion of Fig. 7 in perspective and Fig. 9 indicates a fragmentary portion of a cash register with the coin detector positioned therein.

A housing 20 for the coin detector comprises the side walls 21, the flanges 22 at their top ends, the end walls 23 and the bottom wall 24. One of the walls 23 is shown with the opening 23a at its lower end and the slot 23b at its top end.

A discharge chute 25 comprises the side walls 26, the inclined bottom wall 27, the cup shaped end wall 28 and the supporting wall 29 having the flange 30, which latter is fastened to the wall 24.

A cover 35 is supported on the flanges 22 and is fastened in place by the screws 36. From the cover 35 extends the supporting bracket 37.

The cover 35 has integral therewith the main inlet conduit 40 rectangular in cross-section and is shown with the side walls 41 and the end walls 42. In one of the walls 42 is shown the clearance opening 43a. The conduit 40 extends above the cover 35, with the curved upper portion 44 for one of the ends walls 42. An inclined flange 45 is shown at the upper end of the conduit 40, with the inlet opening 46.

A pair of brackets 50 are each shown with a foot 51 at the upper end and the latter are fastened to the cover 35.

A brace 52 with the flanges 53 connects the brackets 50. A clearance opening 54 is shown in one of the brackets 50.

A shaft 55 having threaded ends is tightly supported in the lower ends of the brackets 50, and nuts 56 securely clamp the shaft 55 in place.

A release lever 60 is shown with a hook end 61 at its lower end, and the hub 62 adjacent to its upper end. An operating rod 63 is shown with the disc handle 64 at one end and is pivoted at its other end to the release lever 60 by means of the pin 65. The rod 63 at one end is slidably supported by the bracket 37.

A pin 66 extends from one of the main brackets 50 and leads through the hub 62 to support the release lever 60.

An upper conduit lever is designated in its entirety by the numeral 70. The lever 70 comprises the upper plate 72, which has integral therewith the conduit 73 with the tapered portions 73a at its upper end, see Fig. 8. The conduit 73 is indicated with the side walls 74 and the slightly tapering end walls 75. One of the walls 75 has the clearance opening 75a. The

conduit 73 connects with the conduit 40, when the lever 70 is in its uppermost position, see Figs. 3 and 4. A pair of arms 76 extend at right angles from the plate 72. Hubs 78 extend from the outer faces of the lower ends of the arm 76. The arms 76 are supported on the shaft 55. The plate 72 has extending therefrom the counterweight rod 80, which is threaded at its lower end as shown at 81, for the counterweight 82 to be adjustably connected thereto. A set screw 85 clamps the counterweight 82 in operative position.

A pin 88 extends from one of the arms 76 and is adapted to enter the clearance opening 54 of one of the brackets 50.

A spring 92 with the foot 93 has the latter fastened to the bracket 50 having the opening 54.

The operating rod 64 extends through the slot 23b.

A second conduit lever is designated in its entirety by the numeral 100 and is similar to the conduit lever 70.

The lever 100 comprises the upper plate 102, which has integral therewith the conduit 103 having the side walls 104 and the slightly tapering end walls 105. One of the end walls 105 has a clearance opening 105a similar to 75a. The conduit 103 functions with the conduit 73, when the lever 100 is in its upper position, see Figs. 3 and 4. The conduit 103 extends through the upper plate 102, with the tapered portions 103a similar to 73a.

A pair of arms 106, similar to 76, extend at right angles from the plate 102. Hubs 108 similar to 78 extend from the outer faces of the arms 106. The arms 106 are supported on the shaft 55.

The plate 102 has extending therefrom the counterweight rod 110, which is threaded as shown at 111, for the counterweight 112 to be adjustably connected thereto. A set screw 115 clamps the counterweight 112 in operative position.

The conduit 103 functions with the conduit 73, when the lever 100 is at its normal top position.

A third conduit lever similar to those described is designated in its entirety by the numeral 120. The lever 120 comprises the upper plate 122, which has integral therewith the conduit 123 having the side walls 124 and the slightly tapered end walls 125.

One of the walls 125 has a clearance opening 125a similar to 105a. The conduit 123 functions with the conduit 103, when the lever 120 is in its upper position. The conduit 123 extends through the plate 122, and its upper ends are tapered as indicated at 123a similar to 73a. A pair of arms 126 similar to 106 extend at right angles from the plate 122. Hubs 128 similar to 78 extend from the outer faces of the arms 126. The arms 126 are supported on the shaft 55.

The plate 122 has extending therefrom the counterweight rod 130, which is threaded for the counterweight 132, to be adjustably connected thereto. A set screw 135 clamps the counterweight 132 in operative position.

A fourth and the lowest conduit lever, similar to those described is designated in its entirety by the numeral 140.

The lever 140 comprises the upper plate 142, which has integral therewith the conduit 143, having the side walls 144 and the slightly tapering end walls 145. The walls 144 and 145 are shown with the tapered upper ends 145a similar to 73a, see Fig. 8.

The conduit 143 functions with the conduit 123, when the lever 140 is in its upper position, see Figs. 3 and 4.

A pair of arms 146, similar to 126 extend at right angles from the plate 142. Hubs 148 similar to 78 extend from the outer faces of the arms 146. The arms 146 are supported on the shaft 55.

The plate 142 has extending therefrom the counterweight rod 150, which is threaded for the counterweight 152, to be adjustably connected thereto. A set screw, not shown, clamps the counterweight 152 in operative position.

Referring to Fig. 4 it will be noted that the side walls 104 are somewhat closer together than the walls 74, and that the walls 124 are somewhat closer together than the walls 104, and the walls 144 are somewhat closer together than the walls 124.

Referring to Fig. 9 the coin detector is positioned and secured in place in a cash register designated in its entirety by the numeral 160. An inlet opening 162 is shown for the conduit 163, which extends to the flange 45 of the inlet conduit 40 of the coin detector. The side walls of the housing of the coin detector are again indicated at 21. Brackets 166 hold the housing of the coin detector in place in the cash register. The discharge chute of the coin detector is again indicated at 25 and the disc handle is again shown at 64.

Referring to Fig. 3, a silver dollar coin is indicated at D, which extends from the main conduit 40 into the conduit 73, and the circumferential edge of the coin D bears on the tapered portions 73a of the end walls 75.

A half dollar silver coin is shown at H, which extends from the conduit 73 into the conduit 103, and the circumferential edge of the coin H bears on the tapered portions 103a of the end walls 105.

A twenty-five cent silver coin is shown at Q, which extends from the conduit 103 into the conduit 123, and the circumferential edge of the coin Q bears on the tapered portions 123a of the end walls 125.

A ten cent silver coin is shown at T, which extends from the conduit 123 into the conduit 143, and the circumferential edge of the coin T bears on the tapered portions 145a of the end walls 145.

It will be noted that all the operative mechanism of the coin detector extends from the cover 35 into the housing 20.

To use the coin detector the conduit levers 70, 100, 120 and 140 are located in their upper positions, by virtue of the counterweights 82, 112, 132 and 152, see Fig. 5.

We may suppose a genuine silver dollar coin D is passed through the inlet opening 46, Fig. 1 to enter the main inlet conduit 40. The said dollar D drops into the upper end of the conduit 73, Fig. 3 of the conduit lever 70. The weight of the coin swings down all the conduit levers in the direction of the arrow 175, Fig. 6. The coin D then passes through the clearance opening 43a of the main conduit 40, Fig. 3, and drops into the discharge chute 25, from which it can be easily removed. If the coin is underweight, all the conduit levers as previously stated will not swing sufficiently to permit the dollar coin D to roll from the conduit lever 70 into the discharge chute 25.

On the discharge of the genuine silver dollar D, the conduit levers, are all swung up to their original positions by their counterweights.

If the coin is underweight, the operator in order to remove the coin from the detector bears on the disc handle 64, and the release lever 60 bears against the pin 88, and thereby all the conduit levers swing down as shown in Fig. 6, and the coin rolls from the conduit 73 of the lever 70 into the discharge chute 25. When the operator releases the disc handle 64, the counterweights cause the conduit levers to swing to their original positions as indicated in Figs. 3 and 4. When the conduit levers swing up the pin 88 bears against the release lever 60, which in turn bears against the spring 92, which latter functions as a shock absorber.

If a silver half dollar coin H passed through the inlet opening 46, to enter the main inlet conduit 40, the half dollar coin H drops into the conduit 103 of the second conduit lever 100, and if a good coin it swings down the conduit levers 100, 120 and 140 in the direction of the arrow 175. The coin H passes through the clearance opening 75a of the conduit 73 and rolls from the conduit 103 of the lever 100 into the discharge chute 25, from which latter it can be easily removed. If the half dollar coin H is underweight, the conduit levers 100, 120 and 140 will not swing enough to permit the coin to roll from the conduit 103 of the lever 100. In such a case to remove the coin from the detector the operator bears on the disc handle 64, and the release lever 60 bears against the pin 88, and thereby the conduit levers swing down as shown in Fig. 6, and the coin rolls from the conduit 103 of the lever 100 into the discharge chute 25. When the operator releases the disc handle 64, the counterweights swing all the conduit levers to their original positions as indicated in Figs. 3 and 4.

If a twenty-five cent silver coin Q is passed through the inlet opening 46 to enter the main conduit 40, the twenty-five cent coin drops into the conduit 123 of the conduit lever 120, and if a good coin swings down the conduit lever 120 and also the fourth conduit lever 140, in the direction of the arrow 175. The coin if of the required weight passes through the clearance opening 105a of the conduit 103 of the lever 100, to drop from the conduit 123 of the lever 120 into the discharge chute 25, see Fig. 1.

If the twenty-five cent coin is underweight, see Fig. 2, the conduit levers 120 and 140 will not swing enough to permit the twenty-five cent coin to roll from the conduit 123 of the lever 120. In such a case to remove the coin from the detector, the operator bears on the disc handle 64, as described for the uppermost and second conduit levers and the coin then rolls from the conduit lever 120 into the discharge chute 25.

If a ten cent silver coin T, is passed through the inlet opening 46 to enter the main conduit 40, the ten cent coin T drops into the conduit 143 of the fourth conduit lever 140, and swings down the lever 140, in the direction of the arrow 175, and if the coin is of sufficient weight the coin rolls from the conduit 143 into the chute 25.

If the ten cent coin is underweight the conduit lever 140 will not swing enough to permit the ten cent coin T to roll therefrom. In such case the operator bears on the disc handle 64 to remove the coin as described for the other conduit levers.

It will be noted that when the conduit levers swing down, see Fig. 6, the pin 88 will contact with the hook end 61 of the release lever 60 and prevent the conduit levers 70 swinging too far. The contact of the pin 88 with the hook end 61 causes the positive discharge of any of the coins from the conduit levers.

Various modifications may be made in the invention, and the present exemplification is to be taken as illustrative and not limitative thereof.

I claim:

1. In a coin tester the combination of a housing, a detachable cover at the upper end of the housing, a main inlet conduit for coins to be tested extending from the outside of the cover to the inside of the housing, said main inlet conduit having side walls and end walls, a pair of brackets spaced from each other extending from said cover, a shaft with its ends supported in the lower ends of said brackets, a pair of counterbalanced conduit levers, one over the other and in vertical alignment with each other hinged to said shaft, the conduits of the levers decreasing in size from the top one to the bottom one, the conduit of each of the levers comprising side walls and a pair of end walls, one end wall of the main inlet conduit and one end wall of the upper lever conduit each having a clearance opening at its lower portion whereby the upper part of a coin of proper weight supported by a lever may upon tilting of the lever pass through the clearance opening, immediately above, said main conduit adapted to permit coins of different denominations to pass therethrough, a manual release lever pivoted to one of said brackets, a hook end at the lower end of said release lever, a pin extending from the top conduit lever adapted to be engaged by the release lever and a discharge chute for the coins at the lower end of the housing extending from the inside to the outside thereof.

2. In a coin tester the combination of a housing, a detachable cover at the upper end of the housing, a main inlet conduit for coins to be tested extending from the outside of the cover to the inside of the housing, said main inlet conduit having side walls and end walls, a pair of brackets spaced from each other extending from said cover, a shaft with its ends supported in the lower ends of said brackets, a pair of counterbalanced conduit levers, normally in vertical alignment with each other and said main inlet conduit, said levers hinged to the shaft, the conduits of the levers decreasing in size from the top one to the bottom one, the conduits of each of the conduit levers comprising side walls and a pair of end walls, one end wall of the main inlet conduit and one end wall of the upper lever conduit each having a clearance opening at its lower portion whereby the upper part of a coin of proper weight supported by a lever may upon tilting of the lever pass through the clearance opening immediately above, said main conduit adapted to permit coins of different denominations to pass therethrough, each conduit lever having extending therefrom a pair of arms, a hub at the lower end of each arm, whereby each pair of arms is hinged to the shaft at the lower ends of the brackets.

3. In a coin tester the combination of a main inlet conduit having side walls and end walls, a plurality of hinged counterbalanced levers normally positioned in line one over the other below said main inlet conduit, each lever having a conduit; the conduits of the levers progressively decreasing in size from the top to the bottom, the conduits of each of the levers comprising side walls and a pair of tapered end walls, one of the end walls of the main inlet conduit, and of each

of the lever conduits except the lowermost having a clearance opening at its lower portion, said main conduit adapted to permit coins of different denominations to pass therethrough, the conduit of the uppermost lever adapted to temporarily hold the largest coin to be tested and the conduits of the levers below the top one adapted to temporarily hold coins of respectively decreased size, each of said levers adapted to swing down when a coin of proper weight is temporarily supported thereby to discharge such coin through the clearance opening next above and manual means to discharge coins which are underweight.

WALTER H. PARNELL.

T. J. TOWSEY.

DETECTOR FOR DETECTING COUNTERFEIT COIN.

No. 187,939. Patented Feb. 27, 1877.

Fig: 1.

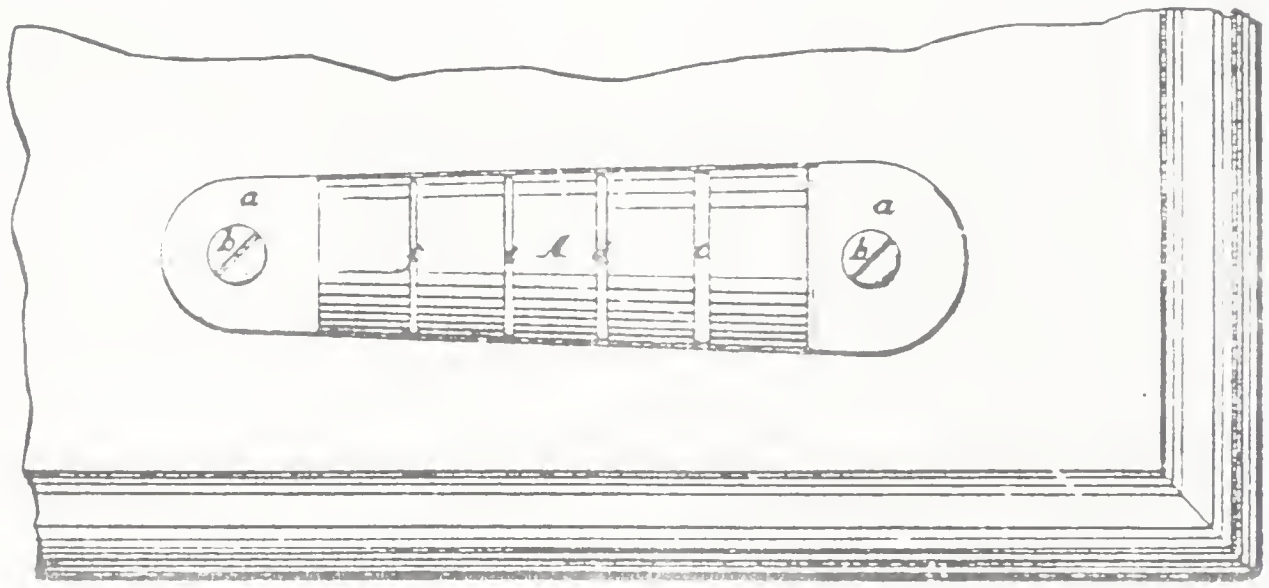
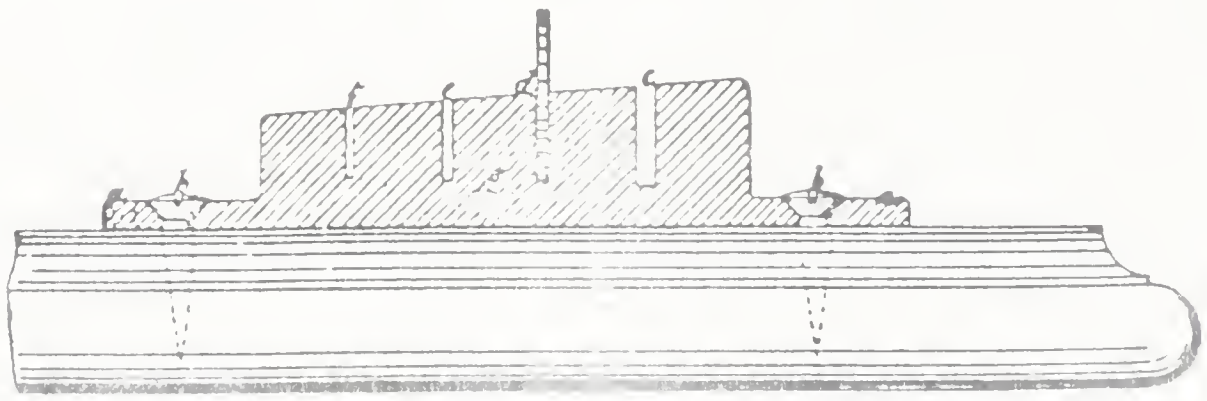


Fig: 2.



Witnesses:

Otto Sutherland

Inventor:

Thomas J. Towsey

by attorneys

UNITED STATES PATENT OFFICE.

THOMAS J. TOWSEY, OF NEW YORK, N. Y.

IMPROVEMENT IN DEVICES FOR DETECTING COUNTERFEIT COIN.

Specification forming part of Letters Patent No. 187,738, dated February 27, 1877; application filed December 13, 1876.

To all whom it may concern:

Be it known that I, THOMAS J. TOWSEY, of the city, county, and State of New York, have invented a new and Improved Device for Testing the Breaking Resistance of Coins, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a plan or top view. Fig. 2 is a longitudinal vertical section.

Similar letters indicate corresponding parts.

My invention has for its object to test the breaking resistance of coins, and to detect the spurious nature of such coins which are made of base metals, but equal in weight and in other qualities to genuine coins.

My invention consists of a receiver, composed of a body having at each end a flange perforated for the passage of screws, to fasten it to a counter or table, and constructed with a series of vertical slots of different width, into either of which a coin of corresponding size to the slot can be placed, for testing the same, as hereinafter more fully described.

In the drawing, the letter A designates a receiver, which is made of cast-iron or any other suitable material, and provided with flanges *a* perforated with holes for the reception of screws *b*, by means of which the same can be readily and firmly secured on a table or counter. In the receiver A are a series of recesses, *c d e f*, of gradually diminishing width and depth, the first recess being intended for testing silver dollars, the second for silver half-dollars, the next for silver quarters, &c. The recess *c*, therefore, is made a little wider than the thickness of a silver dollar, and its depth is about equal to the radius of such a dollar piece, while the width of the recess *d* is a little larger than the thickness of a fifty-cent silver piece, and its depth is about equal to the radius of such a piece, and so on. In the example shown in the drawing all the recesses *c d e f* are in one and the same receiver; but, if desired, a separate casting may be provided for each recess.

The coin to be tested is dropped into the corresponding recess, as shown in Fig. 2, and by pressing against its projecting edge with the thumb, its breaking resistance is ascertained. By these means the spurious nature of such coins can be ascertained which are made of base metal, and which have the same weight and ring as genuine coin, but not the same breaking resistance.

What I claim as new, and desire to secure by Letters Patent, is—

The receiver A, formed at each end with a perforated flange, *a*, for the passage of screws to secure it to a counter or table, and provided in its body with a series of vertical recesses, *c d e f*, of different width and depth substantially as and for the purpose herein described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 6th day of November, 1876.

THOS. J. TOWSEY. [L. S.]

Witnesses:
ROBT. E. MILLER,
E. F. KASTENHUBER.

W. SCHMOLZ.

Scales for Weighing Coins.

No. 156,259. Patented Oct. 27, 1874.

Fig. 1.

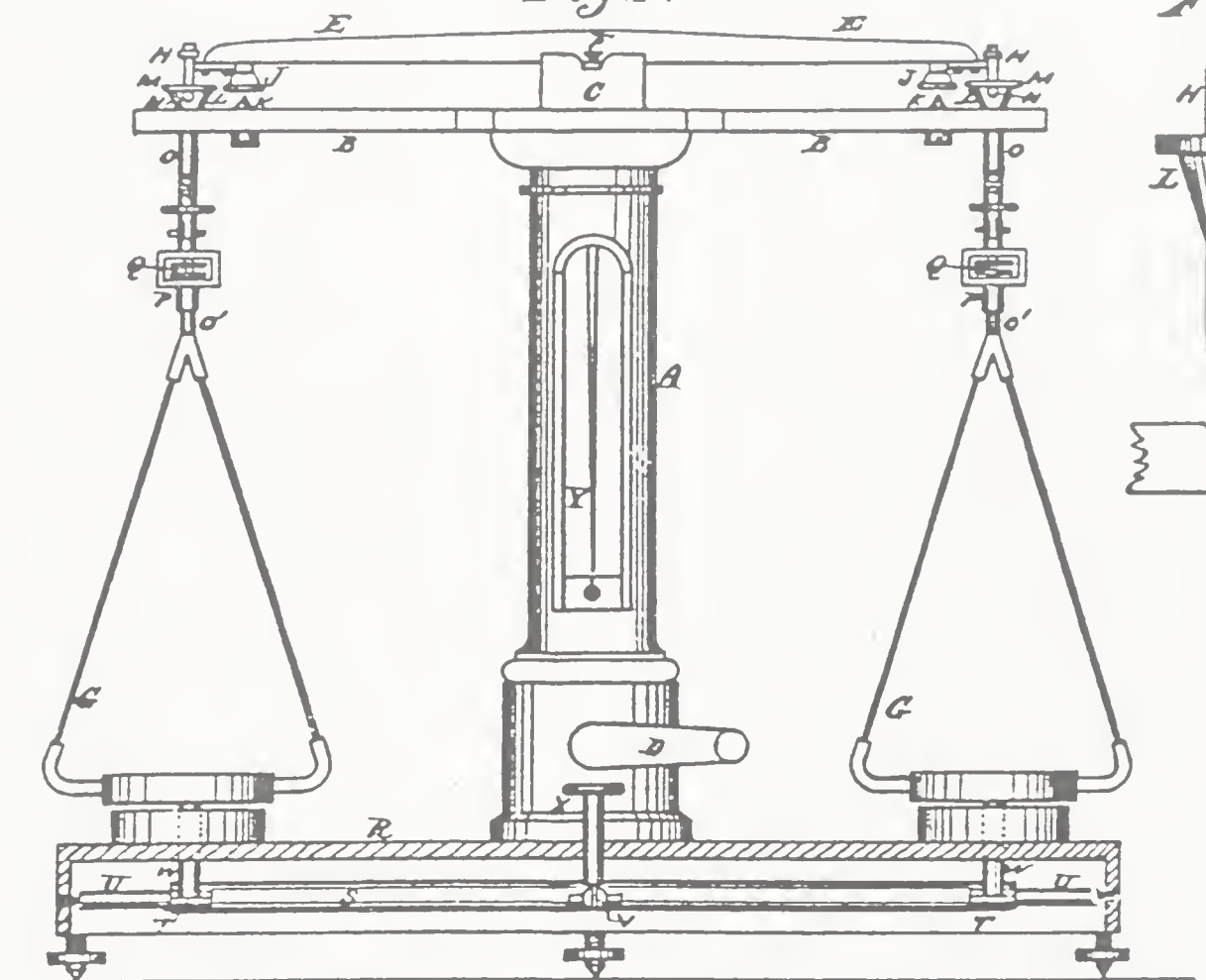
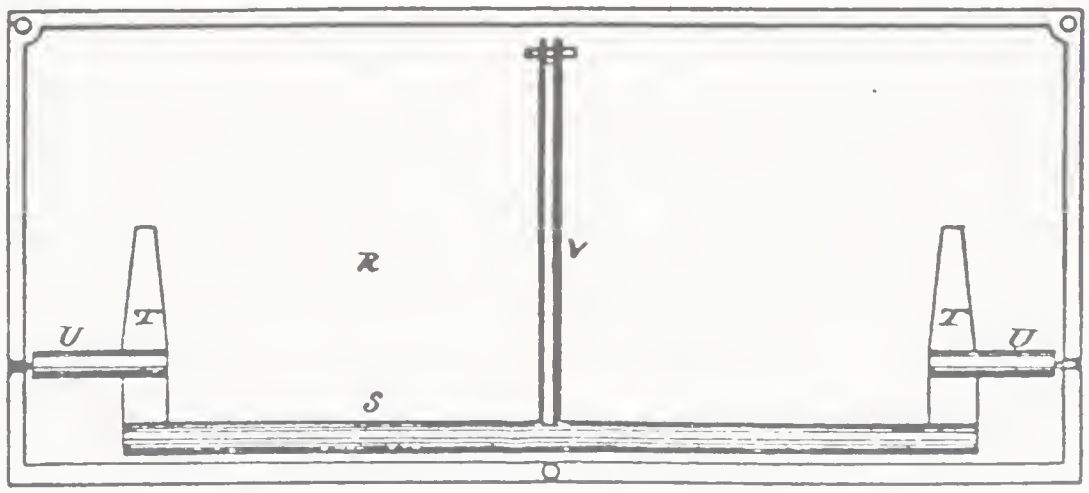


Fig. 2.

Fig. 3.



UNITED STATES PATENT OFFICE.

WILLIAM SCHMOLZ, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN SCALES FOR WEIGHING COINS.

Specification forming part of Letters Patent No. **156,259**, dated October 27, 1874; application filed August 31, 1874.

To all whom it may concern:

Be it known that I, WILLIAM SCHMOLZ, of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Scales for Weighing Coins; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, and the letters marked thereon.

My invention relates to certain improvements on balances which are intended for delicate weighing; and it consists mainly in the use of a novel adjusting arrangement or conical guides, by which I am enabled to place and keep the bearings of the stirrups in a constant and regular position upon the outside knife-edges of a beam. It further consists in the use of a small and fine perpendicular adjustment for raising and lowering the stirrups to set and regulate accurately their lengths by means of two clamp-nuts, as will hereinafter more fully appear.

Referring to the drawings for a more complete explanation of my invention, Figure 1 is a side elevation of my balance with a section of the base. Fig. 2 is an enlarged view of the guides L. Fig. 3 is a bottom view of the base, showing the self-acting lever.

A is the central post, having the arm or plate B across the top. Through the top of the post the block C moves up and down, being operated by an eccentric from below by means of the crank D. E is the scale-beam, resting upon an agate or steel plate in the center of the movable block C by the knife-edge F. The stirrups G are supported from each end of the scale-beam by small uprights, which are covered with agate or steel plates over the knife-edges.

In order to adjust the saddles H so that they will always have their bearings at an

fit without any horizontal movement. A transverse slot receives the pin N as it descends, and this prevents the dishes from being affected by a horizontal movement in practical use, as by the ordinary construction of scales. The rod O which supports the stirrups is provided with a case or open box at its lower end, and a sleeve, P, projects a short distance below this box. The rod O′ which suspends the stirrups enters this sleeve, and is provided with double adjusting thumb-nuts Q, for the purpose of making the stirrups of the same length by lengthening or shortening the rod within the cylinder or sleeve P. Beneath the platform R of the scale is a bar, S, which has two arms, T T, at right angles with itself from its ends. These bars have arms U midway of their lengths, which serve as pivots, about which the arms T turn. Another arm, V, projects from the bar S, near its middle, and parallel with the arms T. The free ends of the arms T are beneath the center of the scale pans or dishes, and a pin, W, extends upward from each arm, so as to touch the bottom of the scale-cup when the stirrups are of the same length. From the end of the arm V another pin passes up through the bottom of the platform, and terminates in a knob, X, at the front. The bar S serves as a counterpoise, and keeps the pins W and knob X raised up just strongly enough to cause the pins to follow the scale-cups when they are raised, and retreat with them when they are depressed. The indicator Y extends down within the column, and the back opening of the column is fitted with a ground glass, so that a light can pass through, but objects behind the column cannot be seen, and thus interfere with a delicate observation of the indicator.

The operation of adjusting the bearings is

part erased by letting the scale-beam down on

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The cones L and transverse pins N of the saddles, in combination with the openings and transverse slots in the plate B, as and for the purpose described.

2. The thumb-screws and nuts Q, for the purpose of raising and lowering the stirrups, as herein described.

3. The counterpoise S, in combination with the arms T T and V, as and for the purpose herein described.

4. The ground glass plate Y of column A, as and for the purpose specified.

In witness whereof I have hereunto set my hand and seal.

WM. SCHMOLZ. [L. S.]

Witnesses:
C. W. M. SMITH,
R. GIBBONS.

3 Sheets--Sheet 1.

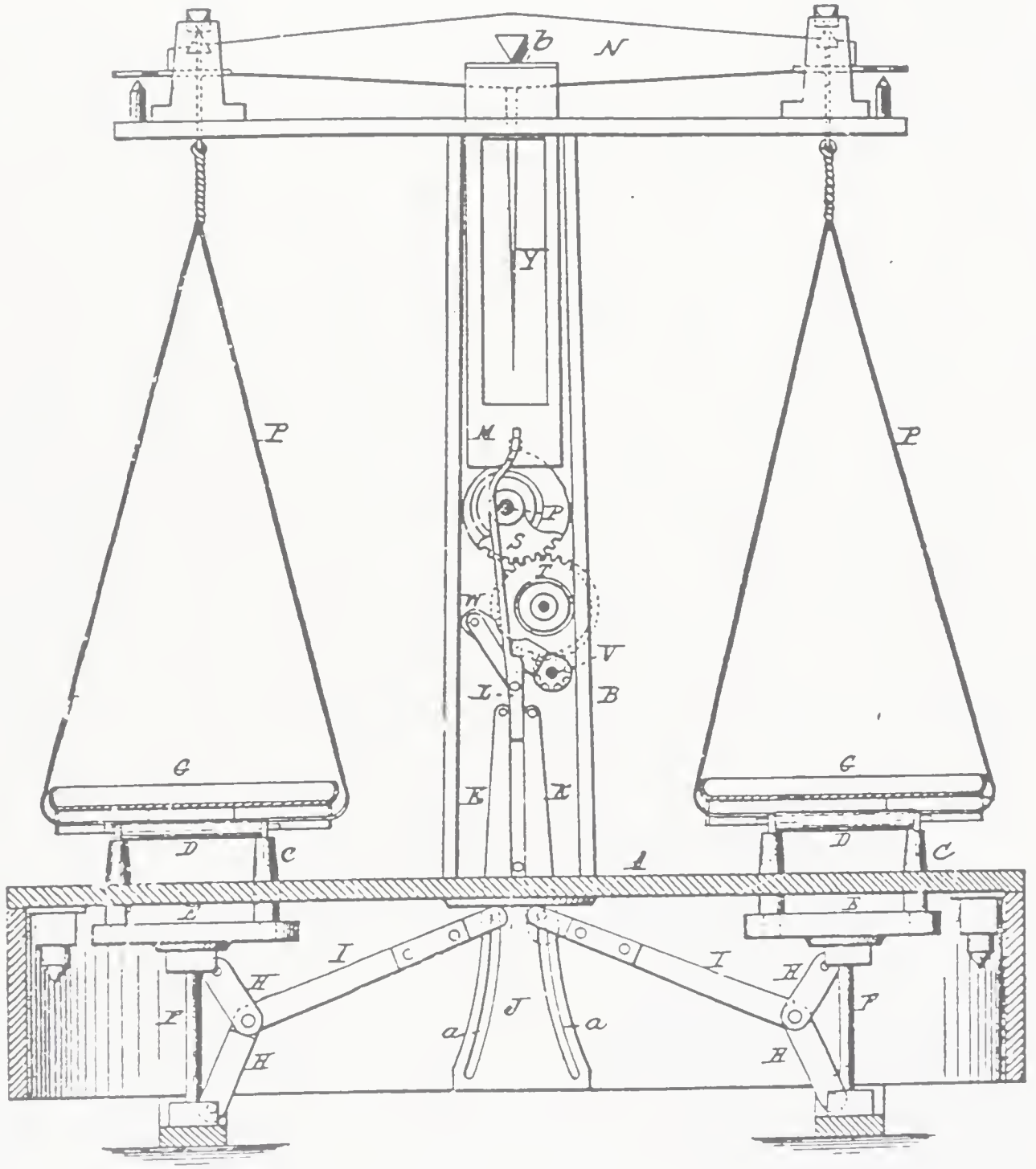
H. S. COCHRAN.

Coin-Scales.

No. 161,098

Patented March 23, 1875.

Fig. 1.



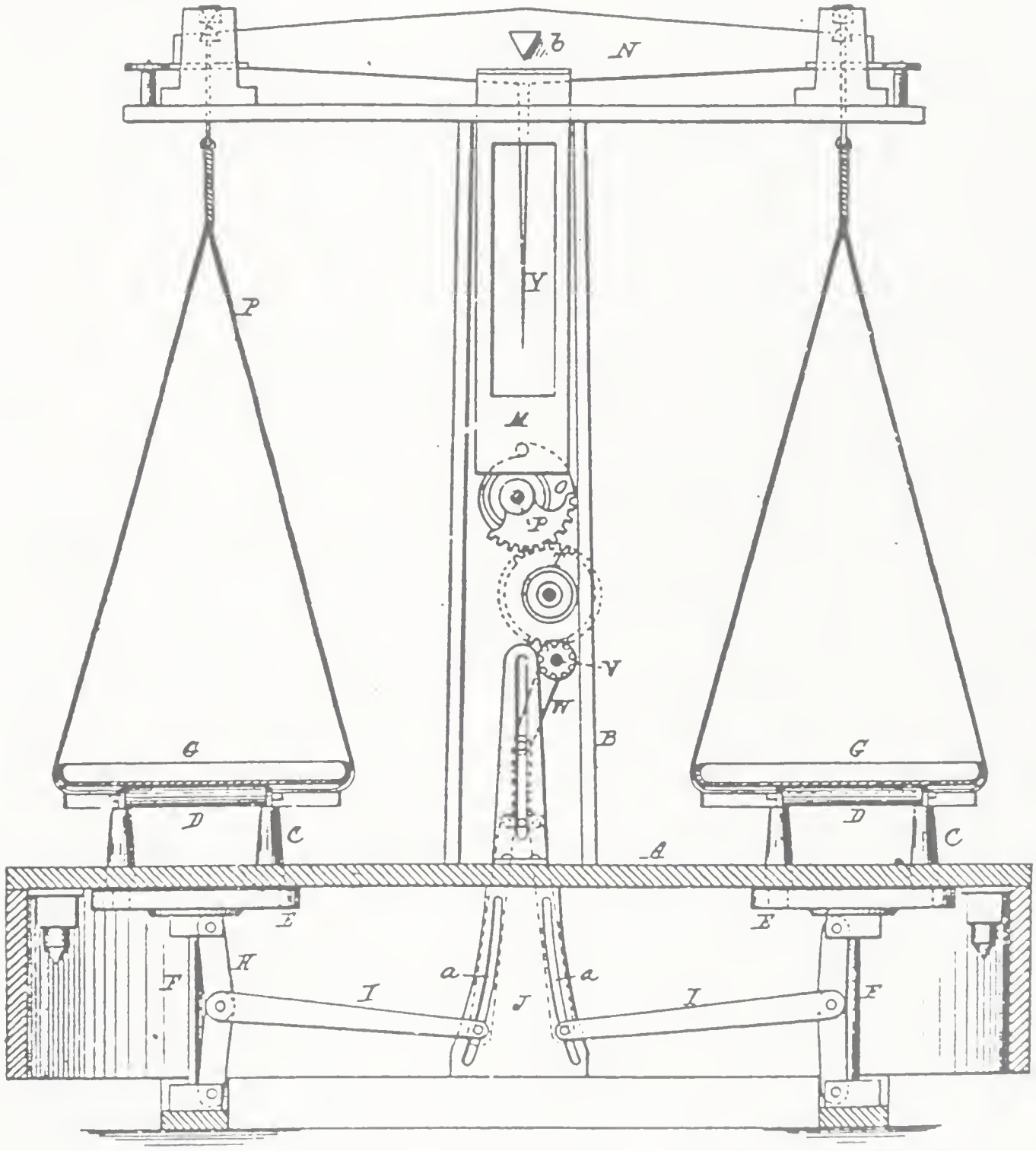
3 Sheets--Sheet 2.

H. S. COCHRAN.

Coin-Scales.

No. 161,098. Patented March 23, 1875.

Fig. 2.



3 Sheets--Sheet 3.

H. S. COCHRAN.

Coin-Scales.

No. 161,098. Patented March 23, 1875.

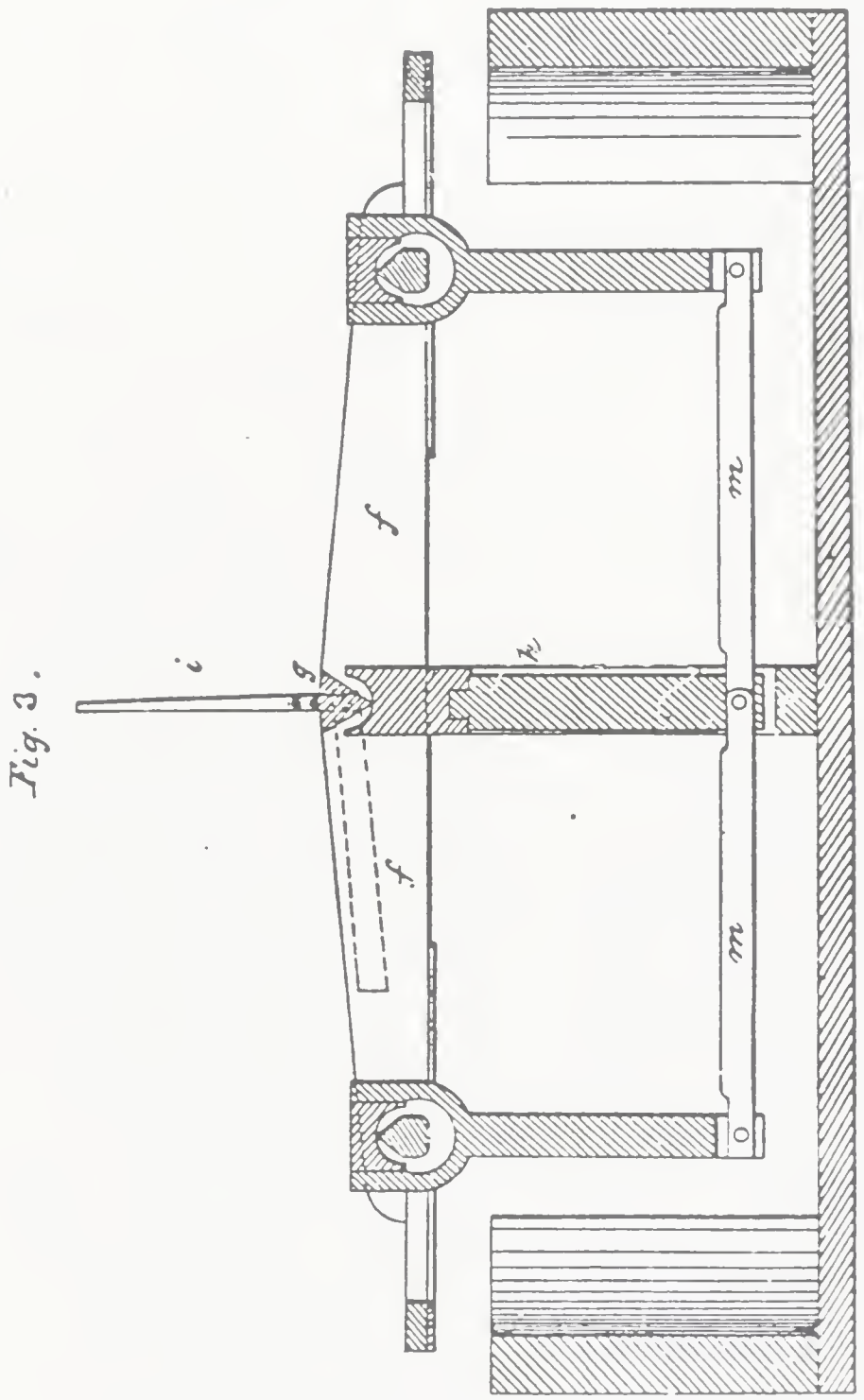


Fig. 3.

UNITED STATES PATENT OFFICE.

HENRY S. COCHRAN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COIN-SCALES.

Specification forming part of Letters Patent No. **161,098**, dated March 23, 1875; application filed February 9, 1875.

To all whom it may concern:

Be it known that I, HENRY S. COCHRAN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Scales for Weighing Gold, Silver, and other material, of which the following is a specification:

The object of the present invention is to provide a weighing apparatus for gold, silver, and other materials, which shall combine two separate and distinct scales of a different construction, one serving as a test-scale for the other, and both entirely independent in their action.

The invention consists, first, in the construction of a vertically-movable platform and lever scale, consisting of frames for supporting the pans, a system of toggle-levers, and connected lever-arms, having guides running in curved slots of a pendent plate on the scale-platform, and carrying vertically-movable rods, which are connected with a pointer-rod moving over a scale-dial or index, the pointer-rod being connected with a shaft carrying a pinion meshing into a spur-wheel, which serves to lock a cam employed for throwing an independent scale into action, and also to return the lower scale to its normal position.

The invention also consists in the employment of a beam-scale resting on a central knife-edge, which scale is held in an inoperative position until the weighing operation has been performed on the lower scale, when, by elevating a movable post or plunger through the medium of a cam-shaft, the knife-edge on the beam is caused to be supported by said post. The pans containing the materials being weighed are elevated from the other scale mechanism, and the latter thrown out of op-

modified form of scale employed instead of the lever-scale shown in Fig. 1.

The letter A designates the platform or base-structure of the weighing apparatus, and B is a central vertical column or standard having one or more removable sides to gain access to the interior thereof. Short posts C, operating through the top of the platform, on each side of the center, carry horizontal rollers D at their upper ends, and are connected beneath the platform-top with a board or plate, E, which slides up and down on a stationary guide-stem, F. The frame so formed supports the scale-pan G, which can be readily run on and off from the rollers. Toggle-levers H, connected with the board E and base A, are connected to the lever-frame, which is composed of side arms I and a connecting-bar. To the center of said connecting-bar is secured a plate, which runs in a curved slot, *a*, made in a centrally-located pendent plate, J, attached to the under side of the platform top. The lever-frames of each scale are connected by means of arms K with a vertically-movable rod, L, which carries or is bent to form a pointer running over a suitable scale-dial or index on the column or standard B. M is a movable post or plunger fitted into the top of the column B, and so arranged that when lowered it is removed from contact with the centrally-fulcrumed scale-beam N. When the plunger is raised through the medium of a cam, O, mounted on a horizontal shaft, P, located below the same, the knife-edge *b* on the beam N is caused to rest upon the top of the plunger, so as to enable the beam to vibrate thereon. The suspension-rods P′, applied to the ordinary appendages at the ends of the beam, are not secured to the scale-pan, and are of such a length and shape at their lower ends that they will not interfere with the

into a spur-wheel, T, that in turn gears into a pinion, U, on a shaft, V, carrying an arm, W, connected with the pointer-rod L. Thus it follows that when the plunger M is raised to place the upper or beam scale into an operative position, the rack-arm, spur-wheel, and pinion will tend to depress the lower scale mechanism by acting the pointer, connecting-arms, and lever-frames. The scale-pans, which have already been elevated by the suspension-rods P′, are then free to rise and fall. A pointer, Y, projecting downward from the center of the beam serves to indicate the correct weight on a suitable dial.

In Fig. 3 is illustrated a scale to be used instead of the lever-scale, which comprises a frame, *f*, carrying a central knife-bar, *g*, and which rocks upon a bed-bar on posts *h*, and carries a pointer or finger, *i*. Arms at each end of the scale-frame are connected with a longitudinal centrally-pivoted lever, *m*.

By placing the upper beam-scale into an inoperative position when the lower scale is being used, the wear and friction upon the knife-edge on the beam is avoided, as the knife-edge is not in contact with anything. It will also be perceived that by combining two distinct scales, in the manner described, an intimate connection of the two is obtained, one being dependent upon the other for securing the desired result, which is a perfect weighing of all material placed upon the scales.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the vertically-movable scale-pan frames, the toggle-levers, the lever-frames, the vertical arms, and the pointer or finger, substantially as herein described.

2. The combination, in a weighing apparatus, of two independent scales, *b*, and mechanism, substantially as described, for simultaneously throwing one scale into an operative position and the other out of action, substantially as described, for the object stated.

3. The combination of the scale-beam, its knife-edge, the vertically-movable plunger or post, and suitable lifting mechanism therefor, with the suspension-rods and scale-pans, substantially as herein set forth.

4. The combination of the lifting-cam, rack-arm, spur-wheel, and pinion with the movable plunger and the duplex scale mechanism, substantially as herein described.

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY S. COCHRAN.

Witnesses:
GEO. W. CUSHING, Jr.,
A. H. NORRIS.

UNITED STATES PATENT OFFICE.

ARON BERNSTEIN, OF BERLIN, PRUSSIA.

IMPROVEMENT IN COIN-COUNTERS.

Specification forming part of Letters Patent No. 182,833, dated October 31, 1876; application filed September 9, 1876.

To all whom it may concern:

Be it known that I, ARON BERNSTEIN, of Berlin, Prussia, in the Empire of Germany, have invented a new and useful Improvement on Apparatus for Separating False and Light Gold Coins, of which the following is a specification:

This apparatus has for its object to provide the public with a simple and convenient means of testing, in quick and automatic manner, the genuineness and correct weight of every gold coin received, without having recourse to gold-scales, which occasion loss of time and disclose a feeling of distrust toward customers and others, and are, for this reason, but little employed in ordinary business.

The apparatus furnishes a reliable means to instantly detect any false or light gold coin without showing the mode or mechanism by which the same is tested, so that thereby the business man is protected against losses arising from this source.

This object is obtained in the present apparatus by allowing the gold coin to fall through a narrow opening and guide-channel onto a balance or tilter, from which it will, if genuine and of full weight, roll at once, by suitable deviating mechanism, into the cash box or receptacle; but if it is not genuine, or of short weight, it is conducted into a separate open receptacle, so as to indicate directly the lack of genuineness or full weight.

The apparatus may be arranged for gold coins of one, two, or more different denominations—as, for instance, for ten and five dollar gold pieces, or to English, French, or German coins, the apparatus being readily adapted and adjusted for either monetary unit.

Similar letters of reference indicate corresponding parts.

In the drawing, A A are two or more narrow openings or slots, that are preferably arranged in the counter, table, or other article, below which the apparatus is disposed for the purpose of being out of sight. The openings A are of such width and length as to correspond exactly to the thickness and diameter of the different gold coins in use. The gold coin is dropped through the opening A, and passed along a vertical guide-channel onto an inclined plane, B, along which it will roll, between guide-arms D, to a balanced plate or piece of metal, C. This plate C forms part of a balance, which is, however, not hung steadily and evenly, as usual in balances, but which is supported by a cross-lever, *a*, in uneven manner, so that the center of gravity is situated higher than the two hypomochlions *b* of the cross-lever. This balance may therefore more properly be called a "tilter." On the arm opposite the plate C is placed a weight, C′, that is adjustable on the threaded arm to such a nicety that a gold coin of proper weight, when it rolls over the plate C, is enabled to depress the tilter; but, on the other hand, a gold coin of too light weight, or a false coin of another metal with less specific gravity, would pass over the tilter without operating the same.

Any other false coin—for instance, one of an alloy of lead—having the correct weight would of necessity be of greater size than the opening A, and be thus detected even before being passed into the apparatus.

The required movement of the tilter is adjusted between set-screws *d*, that bear on the main lever of the same. The coin passes over

A. BERNSTEIN.

COIN-COUNTERS.

No. 183,833. Patented Oct. 31, 1875.

fig: 1.

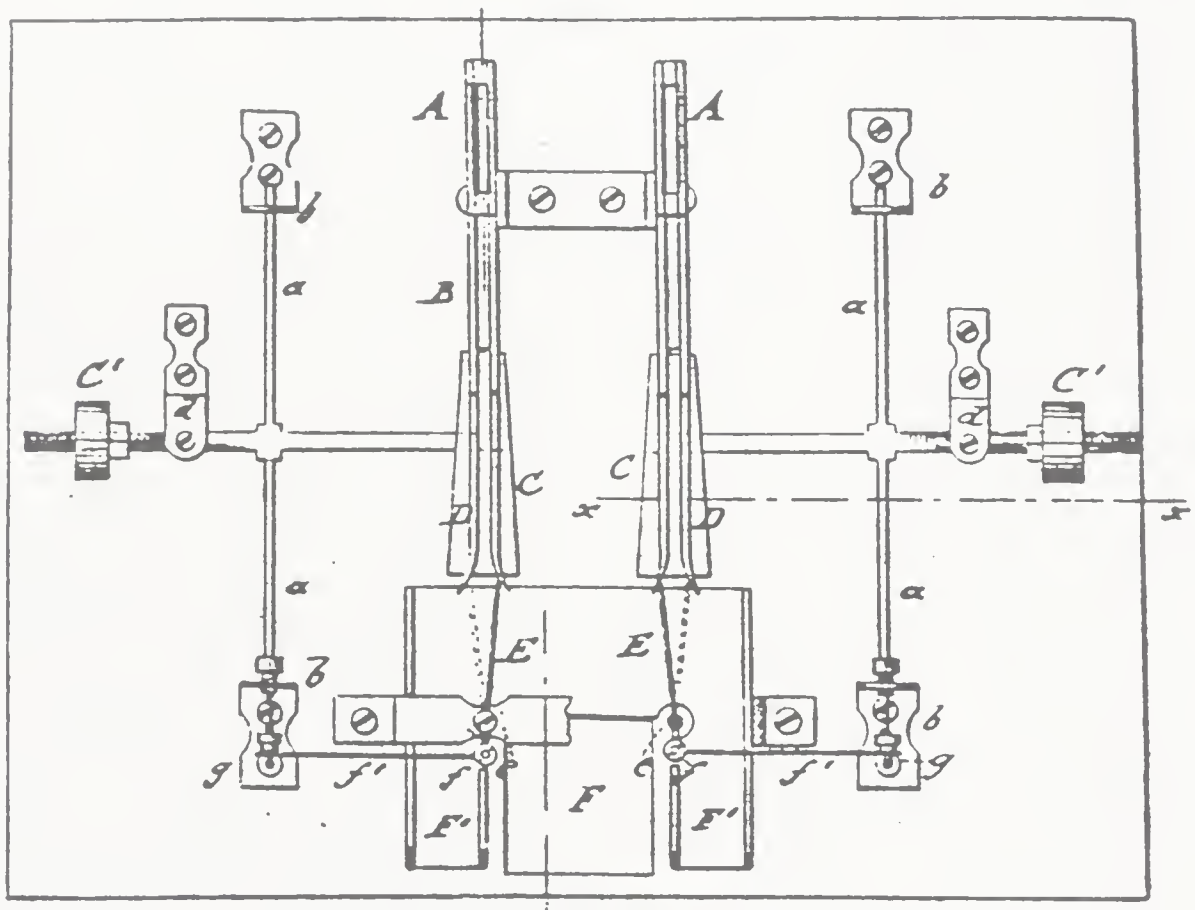
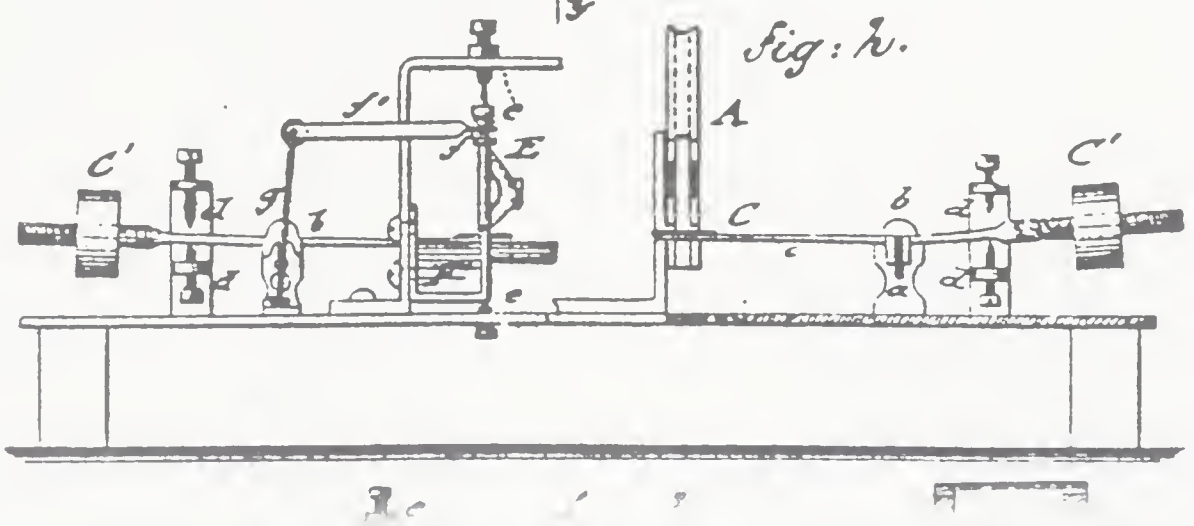


fig: 2.



and vane, and therefore leaves the vane in the position shown in full lines in Fig. 1. A full-weighted coin depresses the tilter and swings the vane into the position shown in dotted lines in Fig. 1, passing along the vane, and dropping directly into the cash box or receptacle F. A light or false coin does not move the vane from its normal position, and is therefore conducted along the same, over an inclined spout, F, to a suitable receptacle for false coins, which receptacle is preferably open, so as to indicate instantly the presence of a defective coin, and admit of its being taken out and handed back to the party that presented it for payment.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An apparatus for separating and detecting light and false gold coins, consisting, mainly, of conducting-channels, a tilting mechanism, and a swinging vane or wing operated thereby, and exit spouts, substantially in the manner and for the purpose set forth.

2. The combination, with the drop-opening A and guide-channels B D, of an adjustable balance or tilter that is only depressed by a coin of full weight, substantially as described.

3. The combination, with a tilting balance, of a swinging vane that is operated by the depression of the tilter by the gold coin, substantially as set forth.

4. The combination of the fulcrum-lever *a* of the tilter with arm *g*, lever-rod *f'*, crank-pin *f*, and vertically-pivoted vane E, substantially as described.

5. The guide-arms D, having curved outer ends, in combination with the vane E, swinging against either end, to conduct the coin without obstruction to the proper receptacle, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARON BERNSTEIN.

Witnesses:

BERTHOLD BOI,

EDWARD P. MACLEAN.

E. LUEDERS.
Coin-Tester.

No. 205,492. Patented July 2, 1878.

Fig: 1

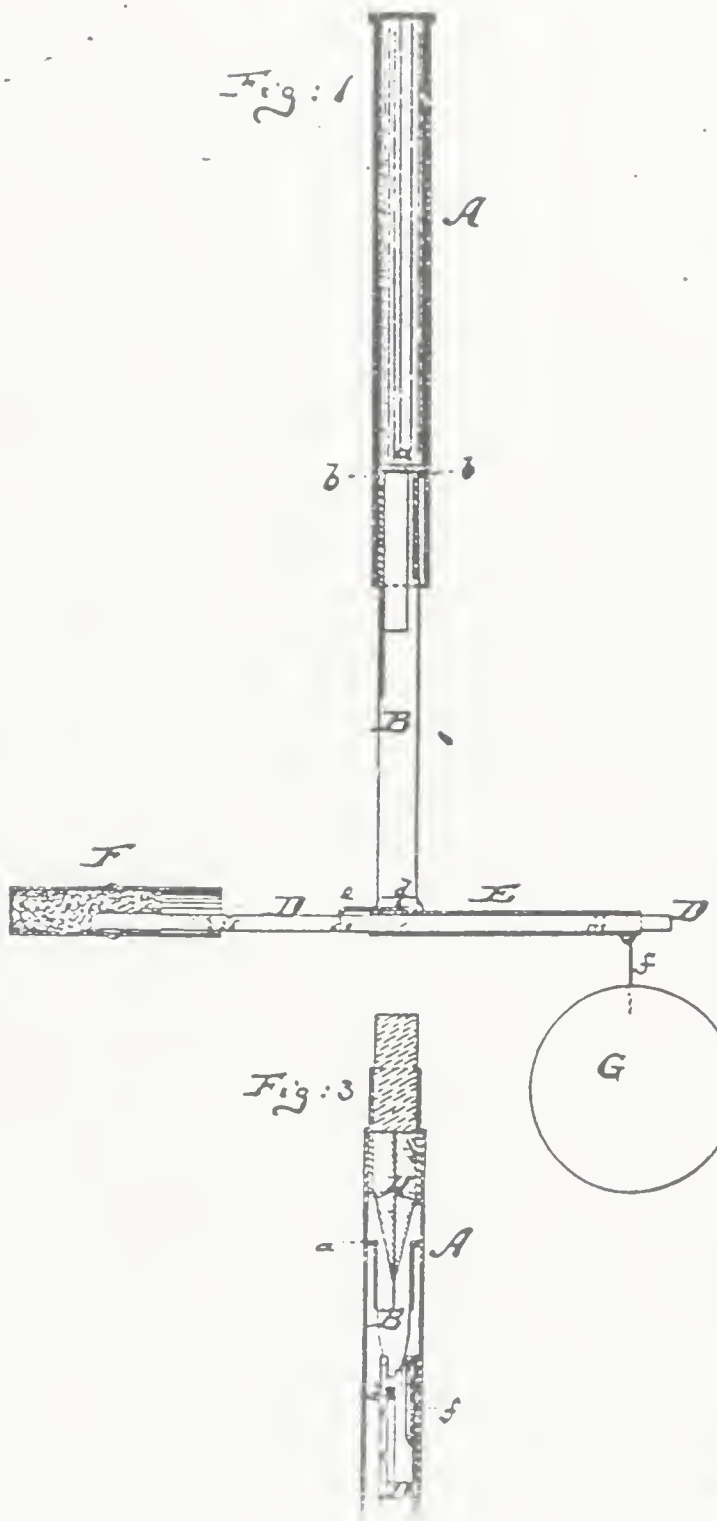
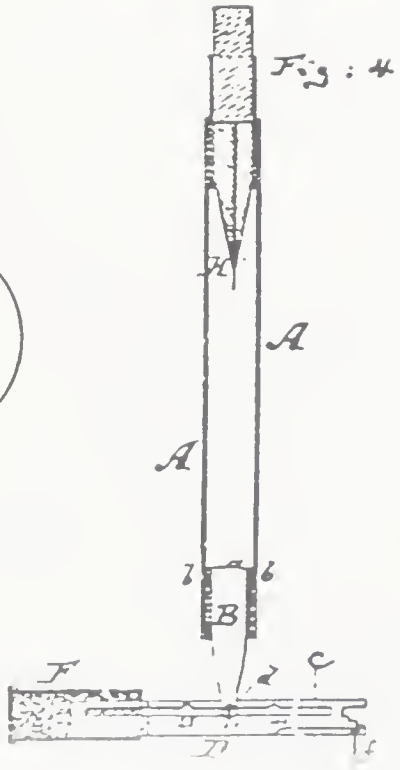


Fig: 2

Fig: 3

Fig: 4



UNITED STATES PATENT OFFICE.

EMIL LUEDERS, OF WEST HOBOKEN, NEW JERSEY.

IMPROVEMENT IN COIN-TESTERS.

Specification forming part of Letters Patent No. **205,492**, dated July 2, 1878; application filed April 19, 1878.

To all whom it may concern:

Be it known that I, EMIL LUEDERS, of West Hoboken, in the county of Hudson and State of New Jersey, have invented an Improved Specie-Scale, of which the following is a specification:

Figure 1 is a vertical central section of my improved specie-scale, showing it extended for use. Fig. 2 is a vertical central section of the same, showing it contracted and folded together. Fig. 3 is a vertical central section of a modification thereof, showing the same folded together. Fig. 4 is a vertical central section of a modification thereof, showing it extended in condition for use. Fig. 5 is a detail cross-section on the line *c c*, Fig. 4, showing the clasp for holding the coin.

Similar letters of reference indicate corresponding parts in all the figures.

This invention has for its object to produce in the most convenient form a pocket-scale for weighing coins, and for distinguishing genuine from counterfeited coins.

The entire instrument can be folded or pushed into a shell, the same as a pocket-pencil, and can be carried in the pocket without inconvenience, and is yet always ready for use when desired.

The invention consists principally in combining, with the inclosing case or shell, having inwardly-projecting stops or pins, a slide having a head, and a scale-beam pivoted to said slide, so that it can be swung at right angles thereto.

The invention also consists in providing said beam at one end with a weight, and at the other end with a clasp for holding the coin to be weighed, and in other details of improvement, hereinafter more fully specified.

I will first describe the instrument as shown in Figs. 1 and 2. In these figures the letter [illegible] adapted to receive the pivot *d* of the scale-beam D. In the construction shown in Fig. 1, the scale-beam D proper slides within a sleeve, E, which sleeve is, by the pin *d*, pivoted to the slide B. The sleeve E carries, in this instance, a projecting spring-catch, *e*, which engages into notches formed on the edge of the beam D, to regulate the several positions of the latter. One end of the beam D carries a weight, F. The opposite end of the sleeve E carries a wire clasp, *f*, of the kind more clearly shown in Fig. 5, for holding the coin G to be weighed.

The beam D in Fig. 1 is shown to be provided with four notches. That nearest the weight F is for defining its position in weighing quarter-dollars; that next thereto, and in which the spring *e* is shown to engage in Fig. 1, defines the position of the scale-beam in weighing half-dollars. The third notch is intended to weigh the so-called silver "legal-tender" dollars; and that next thereto, the trade-dollars; but other notches may be supplied for weighing other kinds of coin, even gold coin, if desired.

When the instrument is not required for use, the sleeve E and beam D are folded into the forked slide B and pushed into the shell A, as in Fig. 2, in which case the cylindrical weight F will close the formerly open end of the shell, as also shown in Fig. 2.

The modification shown in Figs. 3 and 4 differs from the apparatus shown in Figs. 1 and 2 substantially only in that the sleeve E is dispensed with, the beam D being slotted instead, and the slot supplied with a series of notches, as clearly shown in Fig. 4, so that the beam may be directly adjusted on the pivot *d* in lieu of adjusting it within the sleeve E.

In this case the clasp *f* is directly attached to the non-weighted end of the beam D, as [illegible]

scale-beam pivoted to said slide, and carrying a clasp for suspending the coin, all arranged so that the scale-beam is at right angles to the slide when the scale is used; but

I do claim—

1. The shell A, made with inwardly-projecting stops or pins *b*, and combined with the slide B, having head *a*, and with the scale-beam D, pivoted to said slide so that it can be swung at right angles thereto outside of the shell, substantially as herein shown and described.

2. The combination of the pivoted sleeve E with the notched beam D, carrying weight F, and with the spring-catch *e*, for operation substantially as specified.

EMIL LUEDERS.

Witnesses:
T. B. MOSHER,
J. TURE.

UNITED STATES PATENT OFFICE.

GILBERT SMITH AND JOHN J. WELLS, OF SAN FRANCISCO, CALIFORNIA.

COIN TESTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 250,333, dated June 13, 1882.

Application filed November 14, 1881. (No model.)

To all whom it may concern:

Be it known that we, GILBERT SMITH and JOHN J. WELLS, citizens of the United States, and residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Coin Tester and Indicator, of which the following is a specification.

The object of our invention is to provide a means whereby spurious coins and coins of short weight may be easily and quickly detected.

We accomplish this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the dial with cap for covering the mechanism in position. Fig. 2 is also a front elevation of the dial and stand with cap removed. Fig. 3 is a vertical section in elevation.

Similar letters refer to similar parts throughout the several views.

Our indicating-dial A is mounted upon a stand, as shown, and provided with a scale for testing gold coins of the denomination of two dollars and a half, ($2½,) five dollars, ($5,) ten dollars, ($10,) and twenty dollars, ($20,) and the word "gold" is marked beneath these figures, which figures and scale occupy about one-quarter of the face of the dial. Beneath this gold-scale, above described, we place the scale for silver coins, which consists of the numerals five, (5,) ten, (10,) twenty, (20,) twenty-five, (25,) fifty, (50,) and one hundred, (100,) the latter representing one dollar, or one hundred cents, and the former figures from five cents to fifty cents. This scale is designated by the word "silver."

The hands or pointers B B' operate on a pin, C, upon the face of the dial, the outer end of which is split to receive a spring, D, which latter connects with the arm of the coin-holder E. To the lower end of the arm of the coin-holder is connected a bent pin, a, which operates in a slot made in the pointer or hand B', so as to give play to the coin-holder and take away that rigidity of the parts which a close connection would have or if the arm were permanently fixed to the hand. The upper end of the coin-holder is a flattened piece of metal, and is bent over upon itself to form a slot, F, to receive the edge of a coin and retain it in position while being tested.

In practice we make the spring of such tension, and adjust the indicators or hands with reference thereto, that when a genuine piece of coin is put into the receiver or coin-holder the denomination will be registered or indicated by one of the pointers or hands upon the dial, either in gold or silver, as the case may be. For instance, if the coin be a five-cent piece the silver-indicating hand will point to and be in the exact line with the figure 5 on the dial, and so on from the smallest denomination to the largest, on both the gold and silver scales. Should the coin, however, be counterfeit, or the weight thereof be short by reason of its having been tampered with, the hands will fall short of the figures or marks of the scale which the coin represents, and thus show to a certainty that the coin should be rejected.

It will thus be clearly seen that in the use of our device persons who are unskilled in the weight and value of coins will be put on guard against that deception which is now so largely practiced in money exchanges.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin-holder E, constructed and operating substantially in the manner as herein set forth and specified.

In testimony that we claim the foregoing we have hereunto set our hands this 27th day of October, 1881.

GILBERT SMITH.
JOHN J. WELLS.

Witnesses:
O. W. M. SMITH,
WILMER BRADFORD.

(No Model.)

G. SMITH & J. J. WELLS.

COIN TESTER AND INDICATOR.

No. 259,338. Patented June 13, 1882.

FIG 1

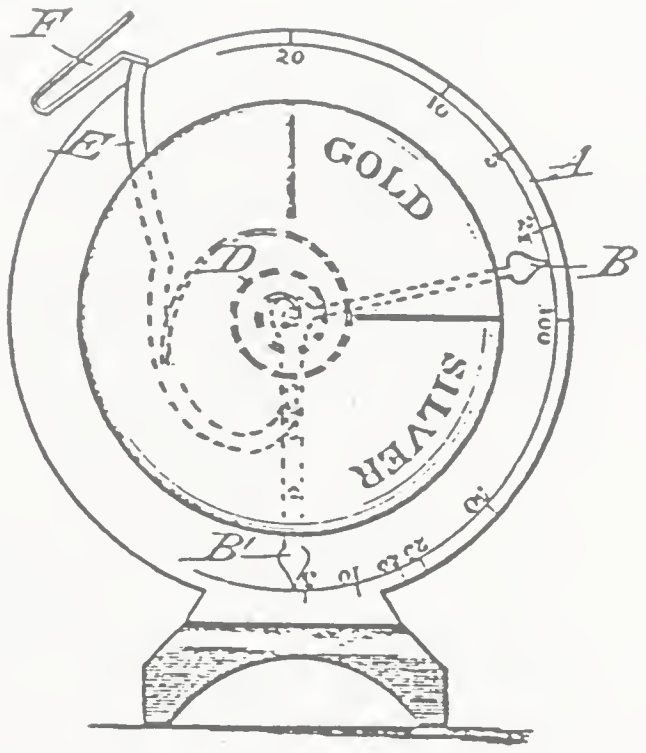


FIG 3

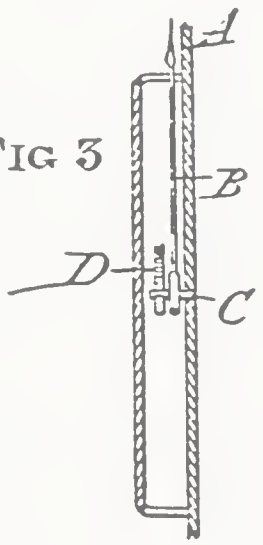
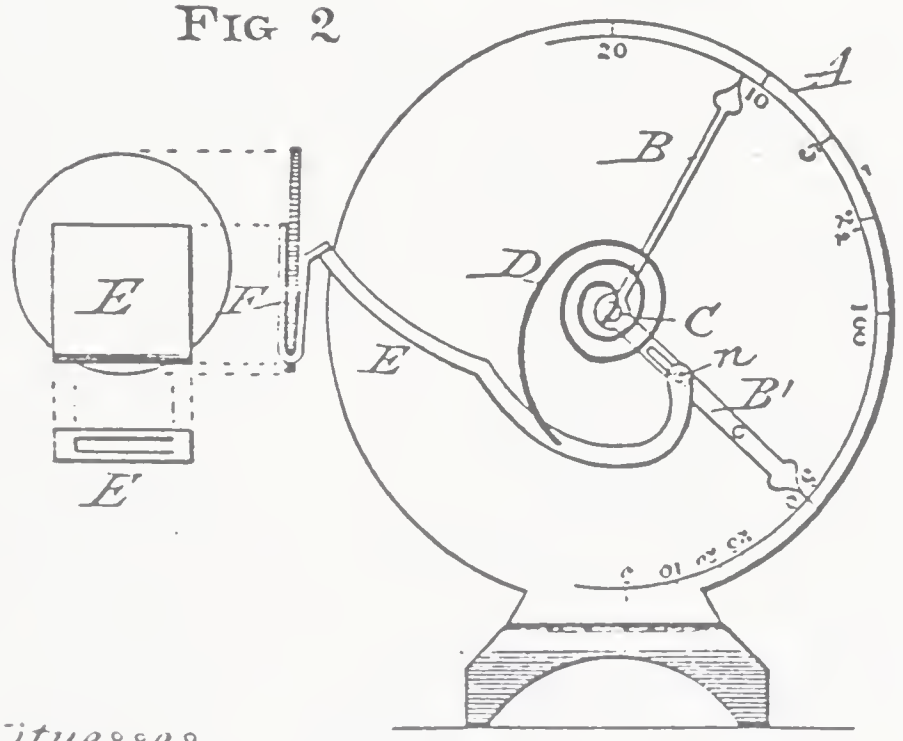


FIG 2



Witnesses
Wilmer Bradford
Charles E Henery

Inventors
G. Smith and
John J. Wells.
By C. W. M. Smith.
Attorney.

259,338. COIN TESTER AND INDICATOR. GILBERT SMITH and JOHN J. WELLS, San Francisco, Cal. Filed Nov. 14, 1881. (No model.)

Claim.—1. The dial A, provided with gold and silver numerals and scales, in combination with the hands, pointers, or indicators operated by a spring, so that when a weight or coin is placed upon the coin receiver or holder the hand will point to that numeral upon the dial that represents the value of the coin placed in the receiver or holder, substantially in the manner as herein set forth and specified.

2. In a coin tester and indicator, the combination of the dial A with the hands or pointers B, spring D, and coin-holder E, constructed and operating substantially in the manner as herein set forth and specified.

UNITED STATES PATENT OFFICE

MORGAN D. SADTLER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE HALF TO JESSE B. FORRESTER, OF BALTIMORE, MARYLAND

COIN-TESTING MACHINE

NO. 867,304 Specification of Letters Patent Patented Oct. 1, 1907

Application filed June 22, 1906. Serial No. 322,904

To all whom it may concern:

Be it known that I, MORGAN D. SADTLER, a citizen of the United States of America, and a resident of Baltimore city and State of Maryland, have inven-ted certain new and useful Improvements in Coin-Testing Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in coin testers adapted to be used in connection with coin controlled machines of all types.

The object of my invention is to provide a mechanism which will test each coin dropped into the machine and if it is attempted to operate the machine by what is commonly called a slug, the mechanism will throw out the slug, though it is of the proper size, diameter, thickness and weight.

My invention tests each coin presented to the machine and unless the coin is of proper size, diameter, thickness and made of the proper metal, the tester will not pass the coin in a matter to operate the coin actuating mechanism to which the tester is applied.

In the form of my invention shown, the tester is adapted to test vari-ous denominations of coins. It is to be understood, however, that the num-ber of denominations which can be tested may be varied as desired.

Referring to the drawings, wherein I show one embodiment of my invention for the purpose of illustrating the same and wherein the same part is designated by the same reference numeral wherever it occurs. Figure 1 is a perspective view of such a tester adapted to be applied to any suitable form of coin controlled mechanism, the top of the case being partly broken away. Fig. 2 is a longitudinal section of the case showing the testing mechanism in a side elevation. Fig. 3 is an end view showing the case in section and operating parts in elevation and in their normal position. Fig. 4 is a view similar to Fig. 3 showing the parts in the position they occupy at the limit of movement of the mechanism during the testing operation. Fig. 5 is atop plan view partly in section of the device with the cover removed. Fig. 6 is a central longitudinal section of the testing disks, the shaft on which they are mounted being shown in elevation. Fig. 7 is a detail perspective view of a pair of disks removed from the shaft. Fig. 8 is a view similar to Fig. 7 showing the other side of a pair of disks. Fig. 9 is a detail view of the hinged member of the coin guide. Fig. 10 is a detail perspective view of the shaft on which the disks are mounted and connected thereto, the disks not being shown on the shaft.

1 designates a rectangular case provided with a cover 2, having slots 3, formed therein for the insertion of coins.

4-4 designates a pair of side frames which are secured to a base 5, these side frames preferably as shown, and provided with means by which the case, 1, may be secured thereto to enclose the testing mechanism.

6 designates a shaft journaled in bearings in said frame 4 and provided

at the end with a handle, 7, which is located outside of the casing 1.

8 designates a series of disks mounted on the shaft 6, the disks being secured to the shaft by any suitable means, as for instance, the pins 9.

10 designates a second series of disks which are loosely mounted on the shaft.

11 are spacing sleeves which, preferably and as shown, are formed integral with the disks 8 and hold the disks 10 spaced a proper distance away from the face of the disks 8. Each of these disks 8 and 10 is provided with a slot 12, the slot being formed radially of the disk, the walls of the slot at the bottom, 13 and for about half the distance to the face of each disk being parallel, the walls then being beveled outwardly as at 14, whereby a slot of a substantially Y-shaped cross-section is formed, as best seen in Figs. 7 and 8. The disks are assembled on the shaft so that a fast disk and a loose disk alternate. The hub 11 extends from the side of the disk 8 which is provided with the slot 12. The slot of the loose disk 10 which is separate from the fast disk 8 by spacing sleeves or hob 11, faces the slot in the fast disk whereby the disks form by their slots a pair of jaws adapted to receive a coin, the length of the hubs 11 determine the size of the coin which each pair of jaws is adapted to receive.

The pair of jaws are preferably and as shown, assembled on the shaft so that the fast and loose disks of adjacent pairs of jaws are in contact whereby the loose jaws are held from endwise movement on the shaft. On the face of each of the fast jaws opposite that containing the slot, I preferably provide a pin 15 adapted to engage a concentric groove 16 formed in

the adjacent face of the loose disk.

17 is a stop formed in the groove 16 with which the pin 15 is adapted to contact, whereby the disk 10 will be caused to rotate with the fast disk 8 when the pin and stop are in contact. The pin 15 and the stop 17 in the slot 16 are so located with respect to each other that when each of the fixed jaws is in normal position, the loose jaws will be held in their normal position by contact between the pin 15 and the stop 17.

18 is a disk mounted on the end of the shaft adjacent the end loose disk and secured to the shaft by a pin 9 the same as the fast disks, 8. The disk 18 is provided with a pin 15 adapted to engage with stop 17 in the groove 16 of the adjacent loose disk, whereby this loose disk will be cause to turn to its normal position by the pin engaging the stop in the same manner as the other loose disks.

19 are notches cut in the side of each of the loose disks with which the free end of springs 20 are adapted to engage. The springs 20 are secured at their base to the frame 5 and they are so positioned that their free ends will engage the notches in the loose disks to hold the loose disks in their normal position in line with the slots of the fast disks when they are in normal position, as shown in Figs. 5 and 6. These springs also act to produce sufficient resistance to the rotation of the loose disks as to cause the pair of disks to bend a coin held between them which is of less hardness than the standard, because the loose disks will not be moved unless the coin or token is of the hardness of the standard coin.

21 is a flanged disk which is secured to one side of the side frames 4

and through which the shaft 6 loosely passes. To the inside of the flange of this disk is secured one end of a clock spring 22, the other end of the clock spring being secured to the shaft 6 whereby the spring will operate to return the parts to their normal position as soon as the handle is released after the operation of the machine.

In order to prevent slugs formed of iron, such as washers and the like, from being fed into the machine, which might operate the machine, if they were of the proper size to accurately fit the slot in a pair of disks and of the proper thickness to be positioned in the slots, due to the fact that they are so hard that they would not be bent under the twisting action of the pair of jaws, I mount a series of magnets 23 on a plate 24 extending be-tween the side frames 4 over the disks. These magnets 23 are shown as secured to the plate 24 by means of screws 25, one magnet being arranged over each pair of jaws.

26 is a plate covering all of the magnets except their ends and held in position by means of screws 25. The magnets are shown as being horse-shoe magnets and the ends of the horse-shoes are so located as to be adjacent to the path of the coin from the coin slots 3 to the slots in the disks, as shown in Fig. 5. From this, it will be seen that should an iron washer or similar slug be inserted in the machine, it will be stopped by the magnets and held, thus, preventing such slug from entering the machine.

27 designates a frame which extends from one end of the case to the other and is located near the top of the case. This frame is provided with coin slots 28 which register with the slots 3 in the top of the case.

29 is a guiding flange which extends downward from the top 2 adjacent slots 3 on to the top of the frame 27 besides the coin slots 28 whereby a coin dropped in the slots 3 is guided from the slots 28.

30 is a plate which forms a pivoted coin guide, it being pivoted at 31 to the ends of the frame 27. This plate is adapted to guide the coin after it passes through the slots 28 down into the slots of the disks.

32 is a spring one end of which is connected to the guide plate 31 and the other to the side of the casing whereby the plate is held normally in position to guide the coin in its proper path. The lower end of this plate extends down close to the periphery of the disks and, preferably, the coin slots in the disks are of such a depth that a portion of the coins project beyond the periphery of the disks when they are in position. It is therefore, necessary to move this plate out of the path of the coins when the disks are rotated to test the same. It is to permit of this movement that the guide is hinged.

33 designates a rod which is formed of a main portion of sufficient length to extend from one end of the shaft 6 nearly to the other and is secured to the shaft outside of the side frame 4. The ends 34 of the rod 33 are bent inwardly at right angles and preferably and as shown, pass through openings in the shaft and are engaged in position by means of nuts 35. The ends 34 of the rod are of such a length that its main portion 33 will pass over the tops of the magnets and close thereto in order to knock off the magnets any slugs which may be held thereon, by the magnetic attraction.

36 is a wing cam mounted on the rod 33 at a corner and this wing cam is

adapted to engage a projecting end portion 37 of the hinged guide 30. The hinged guide being of sufficient length to extend outside the side frame and is provided with slots 38 whereby the guide may straddle said side frames. From this, it will be seen that the wing cam 36 will move the guide out of the path of the coin being held between the disks in the testing operation and will also move the guide out from in front of the magnets so that the rod 33 can remove a slug held by the magnets.

39 is a chute extending from the casing 1 and located is such a position as to catch any slug knocked off the magnet or slug which is bent in the operation of the testing jaws.

40 is an arm mounted on the shaft 6 and adapted to contact with the stops 41 mounted on the side frame, whereby the revolution of the shaft on the operation of the handle in one direction and the spring in another, is limited to one half revolution. The arm on the shaft is so proportioned in relation to the stop that when it is against the lower stop in its normal position and held there against by the spring, the slots in the disks will be direct under the coin slots in the cover so any coin dropped through the slot in the cover will fall into the corresponding slot in the pair of disks.

In the operation of my device, the parts being in their normal position, a token may be dropped through the proper coin slot 3 and will pass down through the corresponding slot 28 and will be guided by the moving guide 30 adjacent to the end of one of the magnets 23. If the token is not composed of iron, it will pass by the magnet without being attracted. If

however, it is of iron, it will be caught by the magnet and held with the upper edge of the token extending above the upper surface of plate 26. If, however, the magnet does not stop the token, then it drops down into the slots in the disks 8 and 10. When now, the handle 7 of the shaft is turned, all of the fast disks 8 turn therewith and if the token is of the proper hardness, it will be sufficient to cause the loose disk of the pair engaging the token to move with the fast disk against the tension spring 20 and the two disks will be revolved together carrying the token between them. This rotation will continue until the arm 40 engages the upper pin 41 when the parts will be in the position in Fig. 4. The striking of the arm 40 against the pin 41 will cause the coin to be released and dropped out of the tester, down into the bottom of the device where it may pass on to any suitable coin controlled mechanism. If, however, the token is not of standard hardness, then when the shaft is turned, the spring 20 will offer sufficient resistance to the rotation of the loose disk to cause the token to be twisted out of the grip of the slots in the disks and the token will fall onto the chute 39 and will be delivered out of the testing machine without the loose disk turning.

The stop 17 in the peripheral slot 16 of the loose disk is so located with respect to the pin 15 on the adjacent fast disk that the fast disk can turn forward without moving the loose disk. If, however, the loose disk is moved by a token of proper hardness, then it will be carried around and the pin 15 and stop 17 will be in such relation that upon the return movement of the shaft, the pin 15 will immediately engage the stop and return the

loose disk to its normal position, ready to receive the next token. As soon as it has been returned, the end of the spring 20 engaging the notch 19, will hold the same in position to receive the next token.

While I have described what I believe to be the preferred form of my invention, I desire to have it understood that many changes may be made in the form, construction and arrangement of parts, and other elements may be substituted for those here shown and described, for the purpose of carrying out the functions of the elements therein shown and described, without departing from the spirit of my invention, and that wherein I use the term "means", this term is to be understood as covering all forms of mechanism which are capable of performing the function ascribed to the term in the claim.

What I claim as new and desire to secure by Letters Patent is:-

1. In a coin testing machine, the combination with a plurality of pairs of jaws, each pair being adapted to hold a coin between them, of the means for subjecting one jaw of each pair to a resistance sufficient to bend anything of less hardness than the coin to be tested and means for moving all the jaws not subject to tension simultaneously whereby a coin will either move the jaw subject to tension or be bent.

2. In a coin testing machine, the combination with a plurality of pairs of jaws, each pair of jaws being provided with slots in their adjacent faces adapted to receive the coin between them, of means of subjecting one of each pairs of jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested and the means for turning all the jaws

not subject to tension simultaneously, whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

3. In a coin testing machine, the combination with a shaft, of a pair of jaws spaced apart and mounted on said shaft, one of said jaws being fast on said shaft and the other being loosely mounted thereon, means for subjecting the jaw which fits loose on said shaft to a resistance sufficient to bend anything of less hardness than the coin to be tested and means whereby the shaft may be rotated whereby a coin or token held between the jaws will either move the jaw subject to tension or be bent.

4. In a coin testing machine, the combination with a shaft, of a plurality of pairs of jaws mounted on the shaft, one of the jaws of each pair being fast on the shaft and the other loose thereon, means of subjecting the latter one of each pair of jaws to a resistance sufficient to bend anything of less hardness than the coin to be tested and means whereby the shaft may be rotated to rotate all the jaws fast thereon whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent.

5. In a coin testing machine, the combination with a shaft, of a pair of jaws mounted on said shaft, one of said jaws being fast and the other loose thereon, said jaws being adapted to hold a coin between them, means for subjecting said loose jaw to a resistance sufficient to bend anything of less hardness than the coin to be tested, means whereby the shaft may be turned to rotate the jaw not subject to tension, whereby the coin or token

held between the jaws will either turn the jaw not subject to tension or be bent and means fast on shaft and adjacent to the loose jaw adapted to return the jaw to its normal position after it has been moved therefrom by a coin.

6. In a coin testing machine, the combination with a shaft, of a pair of disks mounted on the shaft adapted to hold a coin in them, one of said disks being fast on the shaft, and the other loose, means of subjecting the loose disk to a resistance sufficient to bend any coin of less hardness than the coin to be tested, means whereby the shaft may be turned to turn the disk not subject to tension whereby the coin or token will either turn the jaw subject to tension or be bent, a disk mounted on the shaft adjacent to the loose disk and a connection between said last mentioned disk and the loose disk whereby the loose disk will be returned to its normal position upon the return of the shaft.

7. In a coin testing machine, the combination with a shaft, of a plural-ity of pairs of jaws mounted on a shaft each pair being adapted to hold a coin between them, of each said pairs of jaws being loose on said shaft and the other fast thereon, the loose jaw of one pair being adjacent to the fast jaw of the adjacent pair, means for subjecting the loose jaw to a resistance sufficient to bend any thing of less hardness than the coin to be tested, means whereby the shaft may be rotated to rotate all the jaws fast thereon simultaneously whereby a coin or token held between any of the pairs of jaws will either move the jaw subject to tension or be bent, and connection between adjacent jaws of the adjacent pairs, whereby the fast

jaw of one pair will return the loose jaw of the adjacent pair when the same has been moved from its normal position.

8. In a coin testing machine, the combination with a pair of jaws adapted to hold the coins between them, of the means of subjecting one of the jaws to a resistance sufficient to bend any thing of less hardness than the coin to be tested, means for moving the jaw not subject to tension whereby the coin or token will either move the jaw subject to tension or be bent, a movable part adapted to form a guide for the coin to the jaws and means for moving said movable part out of the path of movement of the coin in the grip of the jaws.

Signed by me at Baltimore city & State of MD. this 20th day of June 1906.

MORGAN D. SADTLER

Witnesses:

WILLIAM W. POWELL,

JOHN EMORY CROSS.

Patented Mar. 31. 1925 1.531.642

UNITED STATES PATENT OFFICE

LEOPOLD BRAGIN. DECEASED. LATE OF BROOKLYN. NEW YORK: BY WOLF BRAGIN. ADMINISTRATOR. OF GREENWICH. CONNECTICUT.

SPURIOUS COIN DETECTOR

Application filed July 6. 1923. Serial No. 649.942.

To all whom it mav concern:

Be it known that LEOPOLD BRAGIN deceased. late a citizen of Russia. and resident of Brooklyn, in the county of Kinos and State of New York. has invented new and useful Improvement in Spurious Coin Detectors, of which the followinq is the specification.

This invention relates to devices for testinq coins, and has for its object the provision of a novel balance device formed with holdinq slots designed to receive coins of different denominations, one at a time, discrepencies in the size of the coins beinq indicated bv refusal of the coin to enter the slot or by its slippinq through the slot, and discrepancy in the weight beinq indicated bv too little or too qreat movement of the balance arm.

An important object is the provision of a device of this character which will be verv simple and inexpensive in manufacture, neat in appearance, compact, efficient and durable in service and a qeneral improvement in the art.

With the above and other objects and advantaqes in view, the invention consists in the details of construction to be hereinafter more fullv described and claimed and illustrated in the accompanyinq drawinqs. in which:

Figure 1 is a side elevation of the device. Figure 2 is a plan view. Figure 3 is a cross section taken through the pivotal connection, and Figure 4 is a plan view of the base.

Referring more particularly to the drawings, the numeral 10 designates a base constructed of any suitable material and carrying spaced uprights 11 which may be secured thereto or formed integrally thereon, as preferred. The upper ends of the uprights are formed with bearing holes 12.

In connection with the above described base, I provide a balance arm 13 which is formed at opposite side with pins or trunnions 14 engaged within holes 12 so that the arm is pivoted The shorter end of the arm has its underside weighted as indicated at 14 and has its longer arm formed with slots 15 defined by overhanging projections 16. The different slots are of different seizes and are intended to receive coins of different denominations.

The slots for the heavier coins are naturally nearer the pivot point than the slots for the lighter coins. It is preferable that the balance arm be inscribed adjacent each coin slot with a legend indicating the denomination of the coin intended to be inserted in that particular slot. From an inspection of Figure 3 it will be seen that the slots will receive gold coins of $20.00, $10.00, $5.00, $3.00 and $2.50 denominations and silver coins of $1.00, 50c and 25c.

In the use of the device any coin to be tested is inserted into the proper slot as indicated by the legends. If a coin is too thick to be genuine or of too large diameter to be genuine it will not enter the slot at all.

while if it is too thin or of too small diameter to be genuine it will pass entirely through, thus indicating its spurious nature. If the coin is of the proper size but of the wrong weight, the arm will either fail to swing upon its pivot 14, or else will swing too far, again indicating that the coins are counterfeit or else they have been "sweated" or "plugged", as is a common occurrence in the matter of gold coinage, or else that the coin is of an unauthorized alloy. It is of course necessary that the positions of the various slots be carefully gaged, so that a $2.50 gold piece, for example, will swing the balance arm just as freely as will a $20.00 gold piece.

From the foregoing description and the study of the drawings, it will be apparent that I have thus provided a simple constructed and consequently inexpensive device which will positively operate to test coins and detect all counterfeits. The device is well adopted for use in any business and is neat in appearance and rapid in action. Owing to the simplicity of the construction and the fewness of the parts it is apparent that there is nothing to get out of order so that the device should have a long life and satisfac-torily perform all of its functions.

While I have shown and described the preferred embodiment of the invention it is of course to be understood that I reserve the right to make chan-ges in the form, construction and arrangement of the parts as will not depart from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

A device of the character described comprising an elongated supporting

base formed at one end with spaced upstanding ears, and elongated lever dis-posed between said ears and formed at opposite edges of its intermediate portion nearer one end than the other, with angular extensions constituting trunnions pivotally engaged through said ears, the shorter arm of said lev-er being weighted and normally resting upon the top of said base at one end thereof, and the longer arm of the lever being formed with a plurality of slots of different widths and lengths adopted to receive coins of different denominations to be tested, said long arm of the lever being inscribed with legends opposite the respective slots for indicating the denomination of coins to be engaged therein.

In testimony whereof I, Wolf Bragin, administrator of the estate of Leopold Bragin, deceased, affix my signature.

WOLF BRAGIN

Administrator of Leopold Bragin, deceased.

UNITED STATES PATENT OFFICE

DAVID CUMMING, JR., OF NEW YORK, N.Y.

IMPROVEMENT IN COIN AND LETTER SCALES.

Specification forming part of Letters Patent No. 39,890, dated September 15, 1863; antedated February 2, 1863.

To all whom it may concern:

Be it known that I, DAVID CUMMING, JR., of New York, county and State of New York, have invented a new and useful Improvement in Coin and Letter Scales; and I do hereby declare that the following is a full, clear and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a longitudinal elevation, and Fig. 3 a horizontal plan of the top.

The same letters refer to corresponding parts in the same different figures.

A is the standard, with the bearings B B, on which the knife edges x x rest. The knife edges are firmly secured to the beam C, on end of which has the spring-holder D swinging freely from it on a knife edge. F is a weight, which is attached to the beam by the pivot G. The weight moves freely on the pivot, and is held where required by the spiral spring H on the pivot. Attached to the weight is the curved plate J, containing the marks and figures of the denominations of the different coins, and also the marks and figures indicating an ounce and parts of an ounce for weigh-ing letters.

Manner of working: The coin to be weighed is placed in the spring-holder. and the weight moved around on the pivot until the mark of the denomination of the coin on the curved plate is directly under the index K on the beam. If the coin is of proper weight. the beam will be inclined toward the end on which the coin hangs. Letters are weighed in the same manner.

The machine has been tried and works well. and can be manufactured at a small cost.

What I claim as new. and desire to secure by Letters Patent. is-

The pivoted weight F and curved plate J. operated substantially as described, and for the purpose set forth.

D. CUMMING. JR.

Witnesses:

STEPH. WM. SMITH.

J. S. TUTTLE.

UNITED STATES PATENT OFFICE

HARVEY MARANVILLE, OF AKRON, OHIO, ASSIGNOR TO HIMSELF AND SAMUEL D. STEWART, OF SAME PLACE

IMPROVEMENT IN POSTAL-SCALE AND COUNTERFEIT-COIN DETECTER.

Specification forming part of Letters Patent No. 203,057, dated April 30, 1878; Application filed March 7, 1878

To all whom it may concern:

Be it known that I, HARVEY MARANVILLE, of Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Scales, of which the following is a specification:

Figure 1 is plan view of my improved scales. Fig. 2 is a longitudinal section.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide scales for testing coin and weighing small articles, more especially coin and mail matter; and it consists in a beam having upon one end a graduated rotating disk, which carries the counterpoise, and upon the other end a scale for measuring the diameter and thickness of coin, and a pivoted platform for receiving the coin or package to be weighed.

Referring to the drawing, A A are standards projecting perpendicularly from the base B, and C is a beam attached to a cross-bar, D, the edges of which are V-shaped and have a bearing in apertures in the standards A.

A disk, E, pivoted to the beam, C, and carries on its under surface a weight. b. The beam is bent or offset to permit of turning the disk, and the upper face of the disk is provided with three sets of graduations- one

set for gold, one for silver, and one for mail matter.

The outer circle, c, on the disk is graduated for gold, the first graduation being one dollar, the second for two and one-half dollars, the third for five dollars, the fourth for ten dollars, and the fifth for twenty dollars, and so on. The second circle c^1, is graduated for silver, the first graduation being for five cents, the second for ten cents, and so on. The third and inner graduation, c^2 represents weights corresponding to certain rates of postage, the first or zero graduation representing a package having a weight that requires one three-cent stamp, the second graduation representing a weight that requires two three-cent stamps, the third three three-cent stamps, an so on.

An arm, d, is attached to the beam C, and extends over the upper face of the disk E, and serves as an index in adjusting the disk. Upon the opposite side of the cross-bar D, there is a plate, F, which is provided with two lips, e, f, against which to place the coin in measuring for diameter. The lip e is riveted to the bar D, and the lip f is at right angles to it.

Upon the face of the plate F there are two sets of graduations-one set, g, for silver coin, and the other set, h, for gold coin. The graduations for silver coin range from five cents to one dollar, and the graduations for gold coin range from one to twenty dollars.

In the edges of the plate F, opposite the lip f, two V-shaped notches, i, j, are formed. The notch i, which is for the measurement of the thickness of silver coin, is graduated for five, ten, twenty-five, fifty cents and one dollar. The notch j is graduated for the measurement of the thick-

ness of gold coin, the graduations being for coins from one to twenty or fifty dollars.

The end of the beam C projects upward through a notch in the outer edge of the plate F, and to it is riveted a bar, k, whose upper edge is V-shaped. A stirrup, l, having apertures for receiving the ends of the bar k, is supported by said bar, and has attached to it, below the pivot, a box m, for containing shot or sand for adjusting the scale and for keeping the stirrup in a vertical position. A disk, n, is attached to the upper end of the stirrup, for receiving coin or other articles to be weighed.

When it is desired to weigh an article, the disk E is turned until the proper graduation appears at the indicating-bar d, when the weight b will be in proper position to counterbalance the article. Coin is measured as to thickness by the V-shaped notches i, j, and its diameter is measured upon the scales g, h, by placing them against the lip f.

A block, G, is placed under the beam C, and in it there are two screws, o, one each side of the bar D, for limiting the motion of the beam

The advantages claimed for my improved scale are that it is convenient, simple, and accurate, and, as all of the parts are connected together, none of them can be lost.

Having thus described my invention, I claim as new and desire to secure by Letters Patent-

1. In scales, the beam C, having an upwardly-convex middle bend that supports on a pivot the disk, E, and concavities on each side to allow the passage of a weight, b, as set forth.

2. The combination of the graduated disks E and plates F, supported on beam C, the former having weight b, and the latter a stirrup, as and for the purpose specified.

HARVEY MARANVILLE.

Witnesses:

GEO. G. ALLEN.

G. S. SCOTT.

AUTHORS COMMENTS

As has been previously noted, the actual devices did not always conform to the patented descriptions. This Maranville patent is an excellent example of that. Here the patent called for a device to act as a counterfeit coin detecting mechanism and a letter scale. Yet the Authors, who have several examples of this device, and other who posses the same, have not seen a single example of the patented device. All of the currently known devices are for detecting counterfeit coins only. In addition, all of the currently known devices have an index for the three dollar gold coin in spite of the fact the patent papers make no reference to such a coin.

UNITED STATES PATENT OFFICE

EDWIN STREET, OF SOUTH ORANGE, NEW JERSEY

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. 209,145,

dated October 22, 1878; application filed March 1, 1878

To all whom it may concern:

Be it known that I, EDWIN STREET, of South Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Letter-Scale and Coin-Dectecter, which improvement is fully set forth in the following specification and accompanying drawings, in which-

Figure 1 is a side elevation of the scale and detecter embodying my invention. Fig. 2 is a top view thereof. Fig. 3 is a longitudinal vertical section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of an implement adapted for the combined purposes of weighing letters and indicating the character of coin.

I employ a plate with a slide, an index, and an elevated tray with concentric concavities and slots, the operation whereof will be more fully set forth.

Referring to the drawings, A, represents a poise or balance-plate, and B the standards thereof. On one side of the plate A there is supported a tray C, on whose upper face is a series of concentric concavities, a, which increase in depth and are of diameters corresponding to those of various denominations of coin to be weighed, so that genuine coin will exactly fit

the relative concavity.

In the tray thereof are also formed slots b, of dimensions corresponding to the thickness of genuine coin, whereby the latter will exactly fit the relative slot. To the plate A, on the on the side opposite to the tray C, there is fitted a slide, D, which carries a double index, E, overhanging the respective portion of the plate A, and pointing to postal and coin grad-uations d d formed on the said portion of the plate, the index being preferably constructed of spring metal, so as to produce friction between the plate and the slide and prevent accidental movement of the latter during operations of the weighing letters or detecting coin.

In order to weigh a letter, the latter is placed on the tray C, and the slide D is moved until the plate is balanced, the tray being elevated to prevent contact of the letters, &c., with adjacent parts of the device. The weight of the letter may now be readily read off by observing the location of the index on the graduation or postal scale d.

When the coin is to be weighed the scale will be moved to bring the index over the graduations d', opposite the one corresponding to the weight of a genuine coin. If the scale is in equilibrium, the coin may be consider-ed genuine, subject to the further test of the manner in which the coin fits the relative concavity and the slot b.

It will be noted that the slide D constitutes the counterpoise of the scale, thus dispensing with separate weights, and that the coins of differ-ent denominations are weighed on the same tray C, thus producing a simple and compact implement for the purposes intended.

For delicate weighing of the coin and letters, I employ an auxiliary in-dex or finger, F, which is secured to the axis of the plate A and sweeps over the adjacent standard B, having a central mark or characteristic for indicating the true weight of a genuine coin or registering with the gradua-tions d d' of the plate A.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is-

The plate A and slide D, in combination with the elevated tray C, provid-ed with concentric concavities a and surrounding slots b, substantially as and for the purpose set forth.

EDWIN STREET.

Witnesses:

ROBERT H. POLLOCK,

ELI LONG.

UNITED STATES PATENT OFFICE

GEORGE HOAG, OF NEW YORK, N.Y.

IMPROVEMENT IN COMBINED SCALE AND COIN-TESTER

Specification forming part of Letters Patent No. 216,184,

dated June 3, 1879; application filed March 27, 1879

To all whom it may concern:

Be it known that I, GEORGE HOAG, of the city, county, and State of New York, have invented a new and Improved Combination Scale and Coin-Tester, of which the following is a specification.

Figure 1 is a top view of improved device. Fig. 2 is a view of the same, partly in section, through the broken line x x, Fig. 1. Fig. 3 is a detailed cross-section of the same, taken through the line y y, Fig. 1. Fig. 4 is a detailed view of the reverse side of the coin-scale beam.

Similar letters of reference indicate corresponding parts.

The object of this is to furnish scales for weighing letter and other mail-matter which shall be provided with appliances for testing the weight, size, and thickness of coins, and which at the same time shall be simple in construction and convenient and reliable use.

The invention consists in the combination of the slotted vertical plate with the slotted scale-pan of a scales, for testing the size and thickness of gold and silver coins; and in the combination of a second beam and its weight with the main beam and its weight, and with the scale-pan provided with the slots for testing the weight, the size, and the thickness of gold and silver coins, as hereinafter fully described.

A represents the standard, B the main beam, C the weight, and D the pan

or platform, of the scales, which parts are connected together and balanced in the usual way.

The scale-pan D is made flat, and has a series of slots, d', formed through it to receive the different gold and silver coins, the slots towards one end of the pan D being intended for gold coins, and those towards the other end being intended for silver coins. The slots d' are made of a length and breath equal to the diameter and thickness of the various coins, so as to test their size and thickness.

To the central part of the lower side of the pan D is attached the upper edge of a vertical plate, E, which has slots c' formed in it directly beneath the slots d' of the said pan D. The slots c' are made of a breath equal to the breath of the slots d', and of a depth equal to half the length of the said slots d', so that the coins will be held with their diameters in line with the scale-pan D.

F is the beam which is used for testing the weight of the coins, and which is connected at its ends with the main beam B by bolts, screws, or rivets G. The beam F is provided with a weight, H, for balancing the coins. In the upper edge of the beam F are formed notches at the various points where weight H should stand to balance the various coins.

The notches for the gold coins should be marked upon one side of the beam F, and the notches for the silver coins should be marked upon the other side of said beam, with the value of the coins to which they belong.

The slots d' in the scale-pan D may also be marked with the value of the coins to which they belong.

With this construction the device, while serving as a scale for weighing letter and other mail-matter, also serves as a test for the size, the thick-ness, and the weight of gold and silver coins.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent-

The combination of the scale-pan D, consisting of a horizontal plate, provided with slots d', and the vertical plate E, provided with the slots c', and the supplemental scale-beam F, secured by the bolts G to the scale-beam B. so as to be parallel with the said beam, and provided with the weight H, with the main beam B and its weight C, substantially as and for the purpose set forth.

GEORGE HOAG.

Witnesses:

JAMES T. GRAHAM,

C. SEDGWICK.

AUTHORS COMMENTS

It will be noted that Photograph in Chapter IV shows a Hoag Patent, made by Fairbanks but clearly noting the Patent date as June 3, 1879 which is the correct date for the Hoag patent. Also shown in Chapter IV is a photo-graph of a mechanism made by Fairbanks, but without any patent date and without the double beam to weigh mail matter, only the ability to be used as a counterfeit coin detector. The person who at one time owned it, has cut into the single beam, a number of notches from 1 to 7 ounces in order to use the device for mail matter.

Which "Fairbanks" company this might have been is still a question, but what is known is that in the 1906 The Fairbanks Company catalogue, the double beam combination "Postal and Coin" scale is listed at five dollars in brass. These is no listing of a coin scale without the postal combination.

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ASSIGNOR TO FRANCIS M. SMITH, OF LAKE, ILLINOIS.

IMPROVEMENT IN DETECTERS OF COUNTERFEIT COIN.

Specification forming part of Letters Patent No. 187,936, dated February 27, 1877; application filed January 12, 1877.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Detecters of Counterfeit Coin, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

Figure 1 is a perspective top view of my detecter. Fig. 2 is a side view in the position which it occupies when testing a counterfeit coin. Fig. 3 is a side view in the position it occupies when testing a genuine coin.

The instrument is simply a plate of metal, or other suitable material, (in size and shape similar to an ordinary paper-knife,) with a right-angular bend in or near the middle, as shown in the drawings. On one side of this right-angular bend or fulcrum the plate is plain, with its outer end, when the instrument is not in use, resting on the table, counter, desk, or other level support. On the other side of the right-angular bend or fulcrum the plate contains slots, as per drawings, for coins of different denominations to be tested. The slotted end of the plate contains, say, four places for United States coin, marked respectively ten, twenty, twenty-five, fifty, corresponding to the denominations, in cents, of the most common United States silver coins, and may contain a slot for any coins, United States or foreign, silver or gold. These slots are of such nicely and properly graduated distances from the right-angular bend or fulcrum, according to metrical rules and tests, that when a genuine coin is placed in its proper receptacle, it barely tips the plate on its angular bend or fulcrum until the slotted end rests on the table or other support, as shown in Fig. 3 of the drawings. Consequently, when a counterfeit coin is placed in the slot corresponding to its denomination, it is immediately detected by its light weight in not tipping the balance, or its greater bulk in filling the slot, as the spurious metal, as is well known, is almost invariably lighter than the genuine, and the coin must therefore be necessarily lighter or larger.

What I claim as new and as my invention, and desire to secure by Letters Patent, is—

The coin-weighing plate C D, provided with the right-angular bend A B, and slotted at D, substantially as described, and for the purpose set forth.

JOHN A. THOMPSON.

Witnesses:

F. J. SEYBOLD,

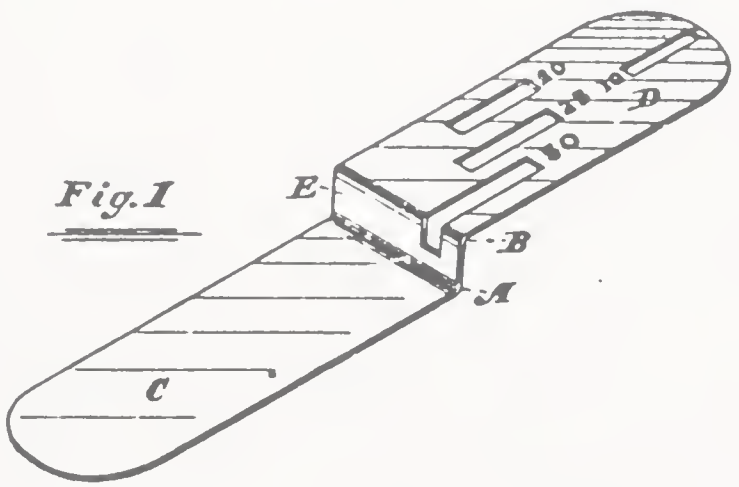
A. J. KIDD.

J. A. THOMPSON.

DETECTORS OF COUNTERFEIT COIN.

No. 187,936. Patented Feb. 27, 1877.

Fig. 1



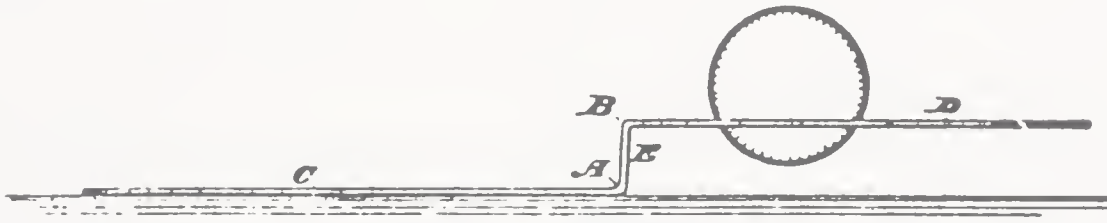


Fig. 2

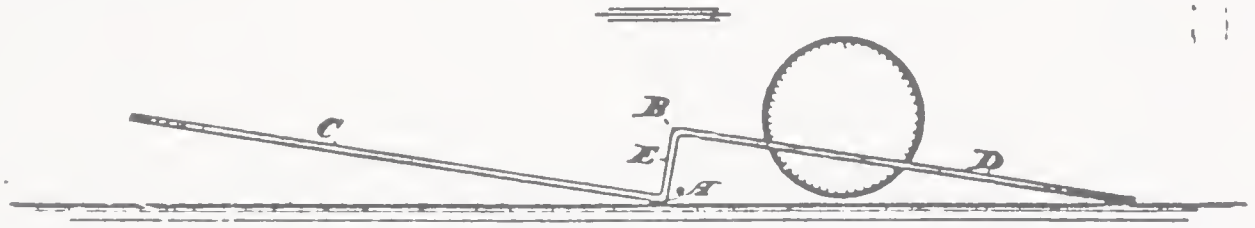


Fig. 3

Attest:

W. T. Baker

A. P. Ted

INVENTOR:

John A. Thompson

UNITED STATES PATENT OFFICE

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. 189,284, dated April 3, 1877; application filed February 23, 1877.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Counterfeit-Coin Detecters, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention; Fig. 2, a side view of my invention when testing a genuine coin. Fig. 3 is a sectional view on the line *y y*, Fig. 1.

This instrument can be struck out completed (except bending the flanges F) by one stroke of a die.

The object of the invention is the detection of counterfeit coin. Counterfeit coin are usually lighter than genuine, and on this fact the invention is based.

F are flanges, on which the instrument rests. These flanges F are bent from the bar or plate C at an angle of from seventy to eighty degrees, as being a suitable angle, but may be at a greater or less angle. The part K of the plate C K that projects beyond the flanges F is supplied with ears or lugs D, arranged in pairs. Each pair is so constructed as to clasp a coin of the denomination designed for it.

The space designed for a United States coin of a given denomination is suitably indicated on the bar K.

The beam or bar C K is balanced, so as to rest on the flanges F, as shown in Fig. 1. When a genuine United States silver coin is placed in its proper receptacle the bar C K will be tipped down, as shown in Fig. 2, till the point E rests on the table or support L, the bar C K turning on the point H of the flanges F.

If a genuine coin of a given denomination is placed in the receptacle corresponding to such denomination the bar K will be tipped, as shown in Fig. 2.

If a counterfeit coin of the proper denomination is placed in either receptacle the instrument remains resting on the flanges F, as shown in Fig. 1.

What I claim as new, and wish to secure by Letters Patent is—

In a counterfeit coin detecter, the bar C K, provided with the flanges F, and lugs D D, substantially as shown and described, and for the purpose set forth.

JOHN A. THOMPSON.

Witnesses:

HENRY C. STRONG,

F. J. SEYBOLD.

J. A. THOMPSON.

COUNTERFEIT COIN DETECTOR.

No. 189,284. Patented April 3, 1877.

Fig. 1

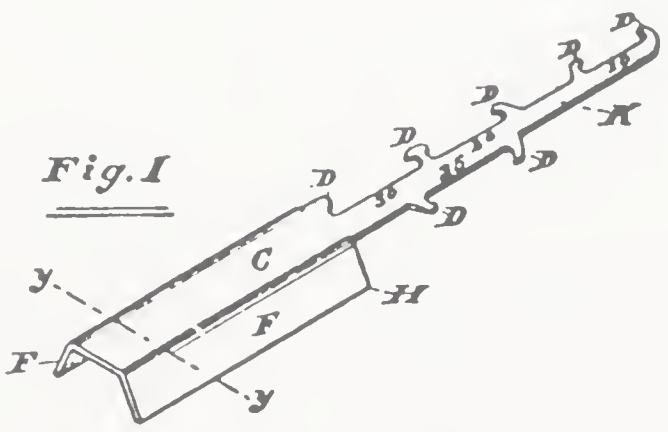


Fig. 2

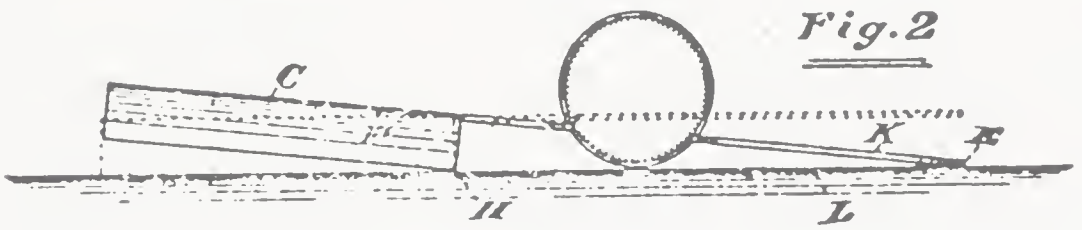


Fig. 3

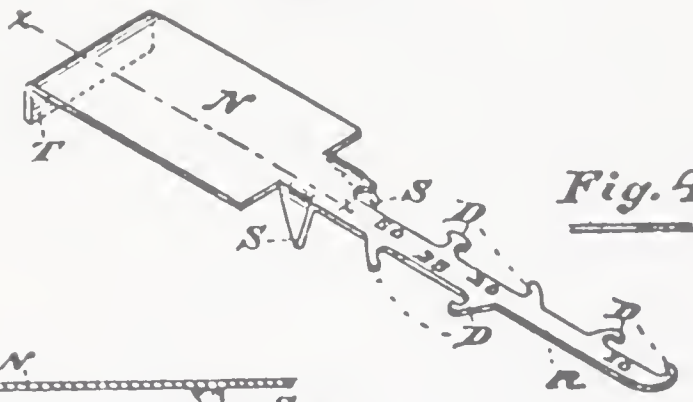


Fig. 4

Fig. 5

Attest,

Wm. F. Baker

Francis J. Colby

INVENTOR

John A. Thompson

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTER.

SPECIFICATION forming part of Letters Patent No. 224,807, dated February 24, 1880.

Application filed January 13, 1880.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Counterfeit-Coin Detecters; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which the figure represents a perspective view of a counterfeit-coin detecter embodying my improvements.

The object of my invention is to provide a device that will readily and surely detect counterfeit from genuine coin; and my invention consists in the construction of the device or detecter, as hereinafter described and claimed.

It is well known that when coin is made wholly or in part of base metal it is lighter than genuine coin of the same size, and if made of the same weight it must necessarily be thicker or larger in diameter than the genuine coin.

In the drawing, A represents a plate of sheet metal of known gage and weight, preferably of brass or German silver, and may be of any desired dimensions, and which is first stamped from a flat piece of metal, and its depending and tapering sides or flanges afterward formed as shown, so as to form the fulcrum for the plate.

In the center of the plate, and running from end to end, is a struck-up rib, *a*, which stiffens and strengthens the plate and divides it into two parts, one side of which is adapted and marked for gold coin and the other for silver. On either side of the rib *a* is a series of slots or perforations, *b*, each of which is of the same width for about one-third of its length, and then gradually increasing in width, so as to form a tapering slot toward the fulcrum of the plate, said slots being of a width sufficient to receive and hold the coin of the desired denomination without allowing it to pass wholly through.

Each of the slots *b* is made wider at its end nearest the fulcrum of the plate, so as to readily receive the coin, while its other end is made of a width corresponding to the thickness of the coin, so that when a genuine coin is placed and held within the slot corresponding to its denomination it will cause the plate to tip down over the fulcrum *c* nearest to such coin, the fulcrum *c* being previously adjusted for that purpose. If the coin is made thicker than and so as to correspond in weight with the genuine coin it will not pass within the desired slot to its proper place, and will, consequently, fail to tip the plate on its fulcrum.

It will be observed that the flanges *d* are made tapering from at or about their fulcrums to their ends, and that the plate A is provided with two fulcrums, *c*, which are formed out of and as a part of the flanges *d*. The space *e* between the fulcrums *c* need not necessarily be cut out, and the notches *f* may be filed away (more or less) for the purpose of adjusting the fulcrums to the plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, substantially as shown and described.

2. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

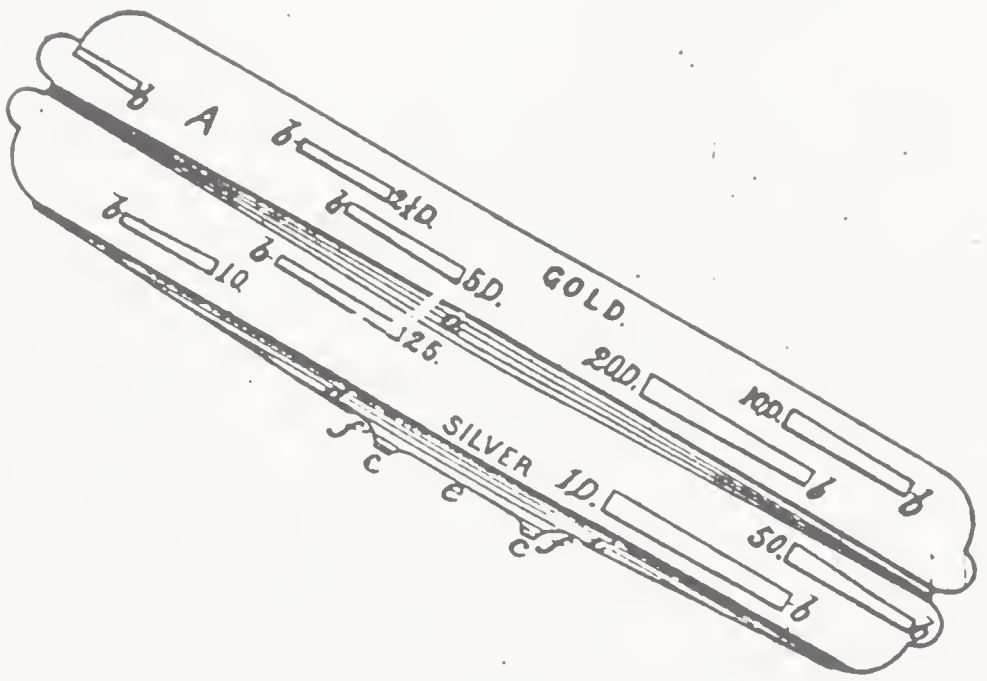
3. In a counterfeit-coin detecter, the plate A, provided with rib *a*, tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

JOHN A. THOMPSON.

Witnesses:
WM. ZIMMERMAN,
N. COWLES.

J. A. THOMPSON.
Counterfeit Coin Detector.

No. 224,807. Patented Feb. 24, 1880.

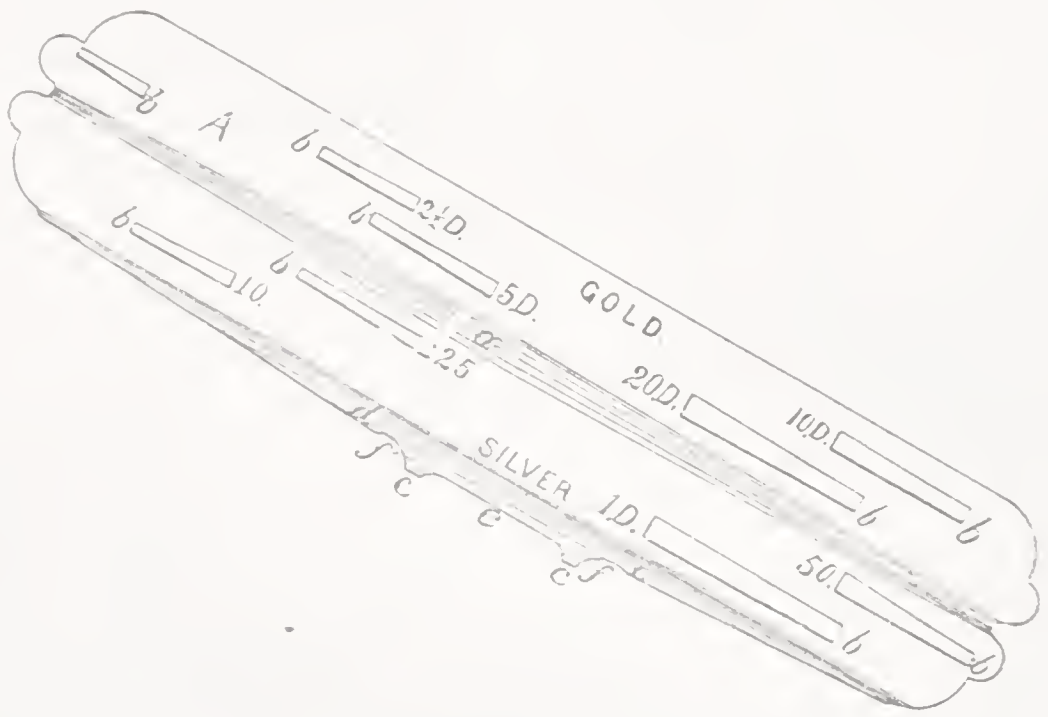


WITNESSES.
Wm. Zimmerman
Chas. H. Wood

INVENTOR.
John A. Thompson
By Bridley & Co
Atty's.

J. A. THOMPSON.
Counterfeit Coin Detector.

No. 224,807. Patented Feb. 24, 1880.



WITNESSES.
Wm. Zimmerman
Chas. A. Wood

INVENTOR.
John A. Thompson
by Gridley & Co
Atty's.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTER.

SPECIFICATION forming part of Letters Patent No. 224,807, dated February 24, 1880.

Application filed January 15, 1880.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Counterfeit-Coin Detectors; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which the figure represents a perspective view of a counterfeit-coin detecter embodying my improvements.

The object of my invention is to provide a device that will readily and surely detect counterfeit from genuine coin; and my invention consists in the construction of the device or detecter, as hereinafter described and claimed.

It is well known that when coin is made wholly or in part of base metal it is lighter than genuine coin of the same size, and if made of the same weight it must necessarily be thicker or larger in diameter than the genuine coin.

In the drawing, A represents a plate of sheet metal of known gage and weight, preferably of brass or German silver, and may be of any desired dimensions, and which is first stamped from a flat piece of metal, and its depending and tapering sides or flanges afterward formed as shown, so as to form the fulcrum for the plate.

In the center of the plate, and running from end to end, is a strengthening rib, *a*, which stiffens and strengthens the plate and divides it into two parts, one side of which is adapted and marked for gold coin and the other for silver. On either side of the rib *a* is a series of slots or perforations, *b*, each of which is of the same width for about one-third of its length, and then gradually increasing in width, so as to form a tapering slot toward the fulcrum of the plate, said slots being of a width sufficient to receive and hold the coin of the desired denomination without allowing it to pass wholly through.

Each of the slots *b* is made wider at its end nearest the fulcrum of the plate, so as to readily receive the coin, while its other end is made of a width corresponding to the thickness of the coin, so that when a genuine coin is placed and held within the slot corresponding to its denomination it will cause the plate to tip down over the fulcrum *c* nearest to such coin, the fulcrum *c* being previously adjusted for that purpose. If the coin is made thicker than usual so as to correspond in weight with the genuine coin it will not pass within the desired slot to its proper place, and will, consequently, fail to tip the plate on its fulcrum.

It will be observed that the flanges *d* are made tapering from at or about their fulcrums to their ends, and that the plate A is provided with two fulcrums, *c*, which are formed out of and as a part of the flanges *d*. The space *e* between the fulcrums *c* need not necessarily be cut out, and the notches *f* may be filed away more or less for the purpose of adjusting the fulcrums to the plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, substantially as shown and described.

2. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

3. In a counterfeit-coin detecter, the plate A, provided with rib *a*, tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

JOHN A. THOMPSON.

Witnesses:
WM. ZIMMERMAN,
N. COWLES.

DESIGN.

J. T. McNALLY & W. H. HARRISON.

SCALES.

No. 12,795. Patented Feb. 28, 1882.

Fig. 1.

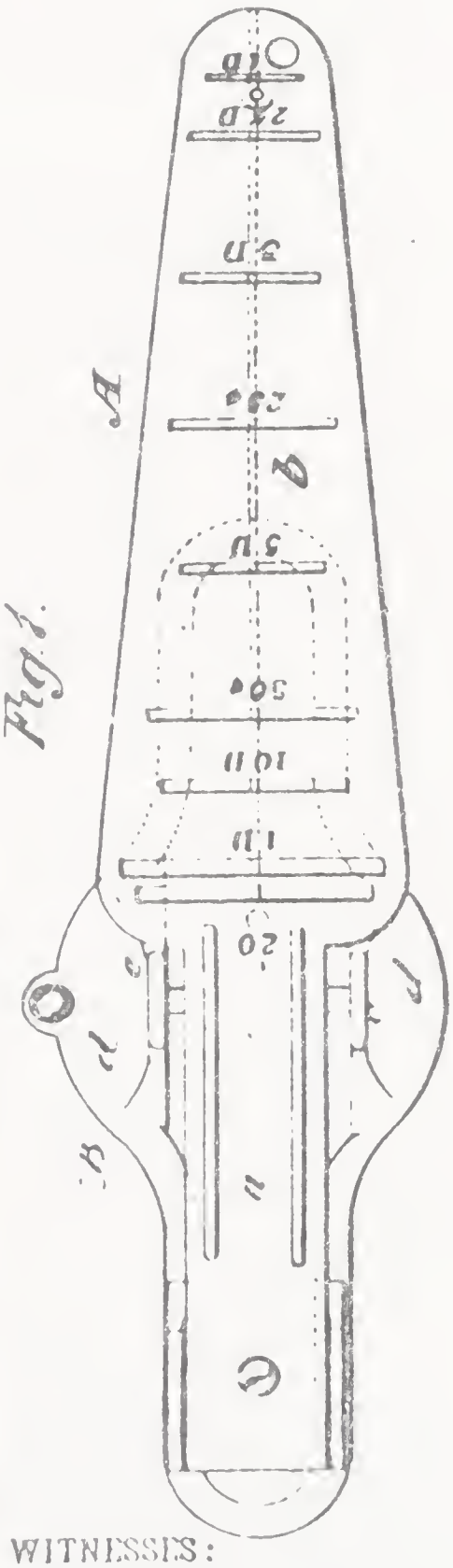
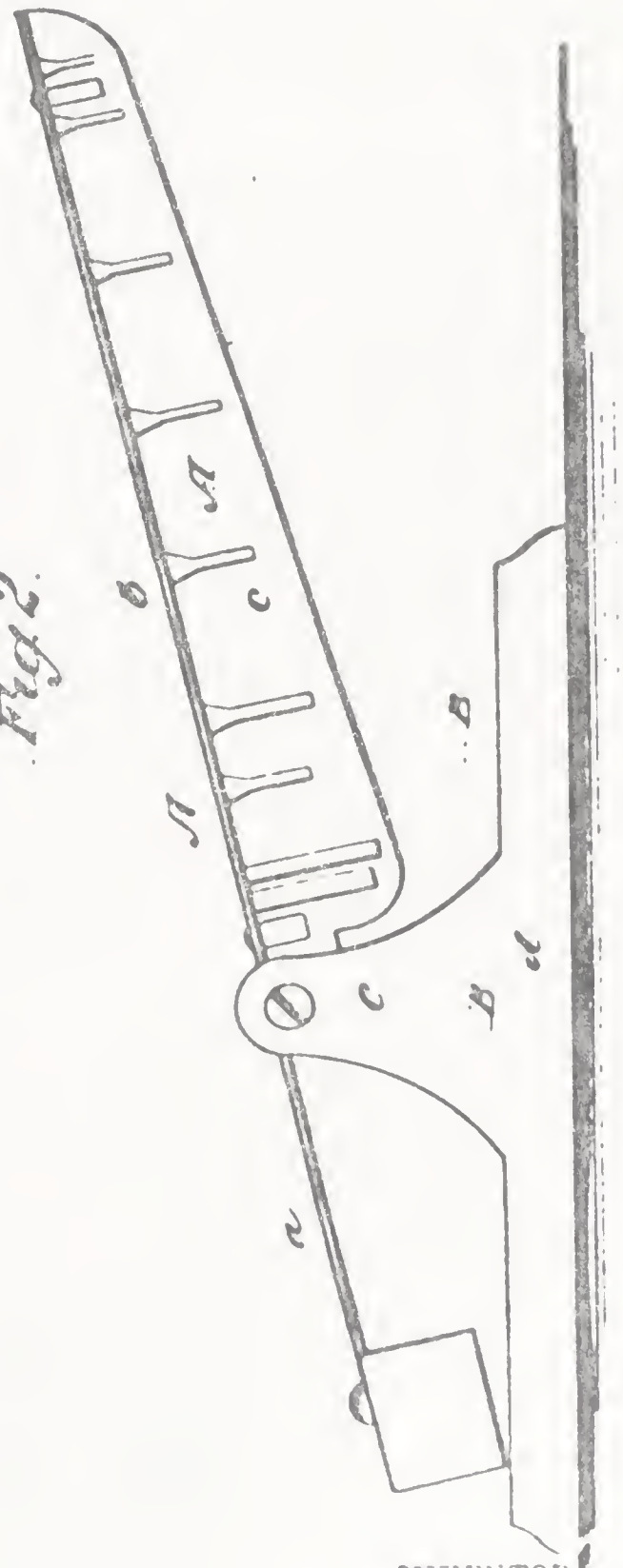


Fig. 2.



WITNESSES:

INVENTOR:

BY

UNITED STATES PATENT OFFICE.

JAMES T. McNALLY AND WALTER H. HARRISON, OF NEW YORK, N. Y.

DESIGN FOR SCALES.

SPECIFICATION forming part of Design No. 12,795, dated February 28, 1882.

Application filed January 6, 1882. Term of patent 7 years.

To all whom it may concern:

Be it known that we, JAMES T. McNALLY and WALTER H. HARRISON, of the city, county, and State of New York, have invented a new and Improved Design for Scales, of which the following is a full, clear, and exact description.

Reference is to be had to the following drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

In the drawings, Figure 1 is a plan view, and Fig. 2 a side view, of our newly designed scale.

A represents the beam, and B its supporting base. *a* is a portion having parallel sides, and *b* a portion having tapered sides, rounded end, and rounded at the vertices of the angles. *c* is a depending rib or flange on the under side of the beam. The whole presents an ornamental appearance to the eye. The base B is oblong in the direction of the length of beam A, and is widened at its mid-length by rounded side extensions, *d d*, at which place it is also formed with vertical flanges *e e* for support of the beam.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

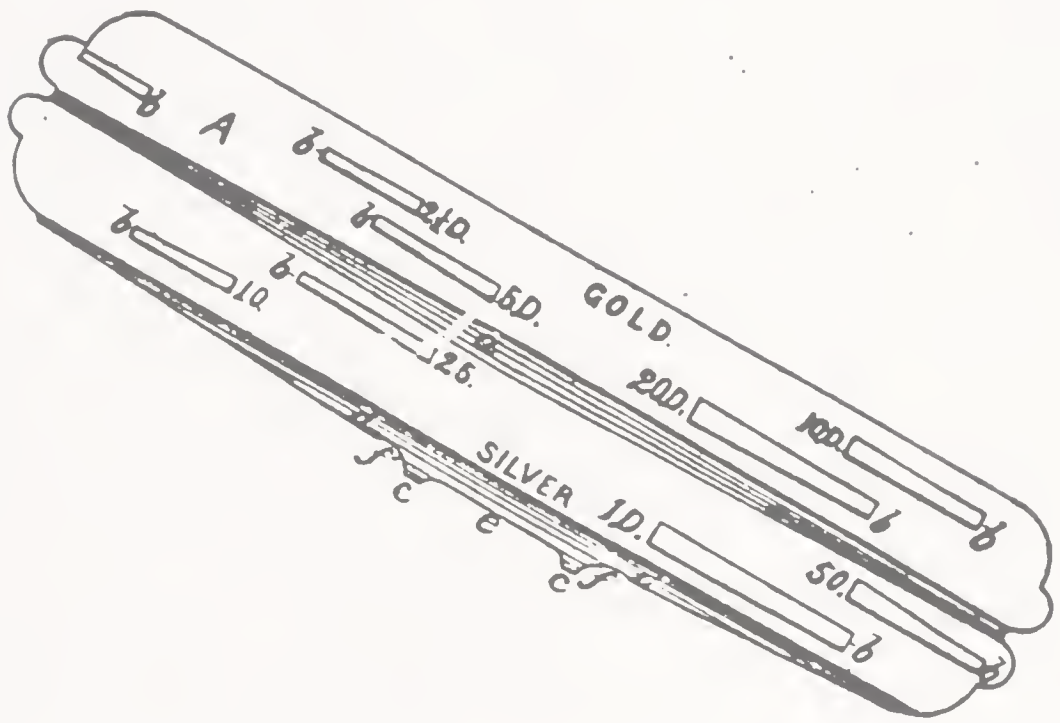
The design for scales herein shown and described, which consists in the oblong base B, having side extensions, *d*, and flanges *e*.

JAS. T. McNALLY.
W. H. HARRISON.

Witnesses:
GEO. D. WALKER,
C. SEDGWICK.

J. A. THOMPSON.
Counterfeit Coin Detector.

No. 224,807. Patented Feb. 24, 1880.



WITNESSES.
Wm Zimmerman
Chas L. Wood

INVENTOR.
John A. Thompson
By Bridley & Co
Attys.

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTER.

SPECIFICATION forming part of Letters Patent No. 224,807, dated February 24, 1880.

Application filed January 13, 1880.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Counterfeit-Coin Detecters; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which the figure represents a perspective view of a counterfeit-coin detecter embodying my improvements.

The object of my invention is to provide a device that will readily and surely detect counterfeit from genuine coin; and my invention consists in the construction of the device or detecter, as hereinafter described and claimed.

It is well known that when coin is made wholly or in part of base metal it is lighter than genuine coin of the same size, and if made of the same weight it must necessarily be thicker or larger in diameter than the genuine coin.

In the drawing, A represents a plate of sheet metal of known gage and weight, preferably of brass or German silver, and may be of any desired dimensions, and which is first stamped from a flat piece of metal, and its depending and tapering sides or flanges afterward formed as shown, so as to form the fulcrum or the plate.

In the center of the plate, and running from end to end, is a struck-up rib, *a*, which stiffens and strengthens the plate and divides it into two parts, one side of which is adapted and marked for gold coin and the other for silver. On either side of the rib *a* is a series of slots or perforations, *b*, each of which is of the same width for about one-third of its length, and then gradually increasing in width, so as to form a tapering slot toward the fulcrum of the plate, said slots being of a width sufficient to receive and hold the coin of the desired denomination without allowing it to pass wholly through.

Each of the slots *b* is made wider at its end nearest the fulcrum of the plate, so as to readily receive the coin, while its other end is made of a width corresponding to the thickness of the coin, so that when a genuine coin is placed and held within the slot corresponding to its denomination it will cause the plate to tip down over the fulcrum *c* nearest to such coin, the fulcrum *c* being previously adjusted for that purpose. If the coin is made thicker than and so as to correspond in weight with the genuine coin it will not pass within the desired slot to its proper place, and will, consequently, fail to tip the plate on its fulcrum.

It will be observed that the flanges *d* are made tapering from at or about their fulcrums to their ends, and that the plate A is provided with two fulcrums, *c*, which are formed out of and as a part of the flanges *d*. The space *e* between the fulcrums *c* need not necessarily be cut out, and the notches *f* may be filed away (more or less) for the purpose of adjusting the fulcrums to the plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, substantially as shown and described.

2. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

3. In a counterfeit-coin detecter, the plate A, provided with rib *a*, tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

JOHN A. THOMPSON.

Witnesses:
WM. ZIMMERMAN,
N. COWLES.

F. J. Herper.

Counterfeit Coin Detector.

No 18,973. Patented Dec. 29, 1857.

Fig 2.

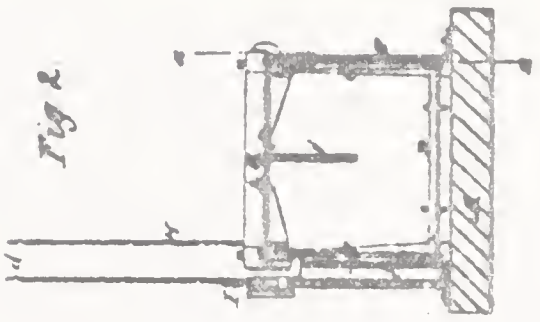


Fig 1.

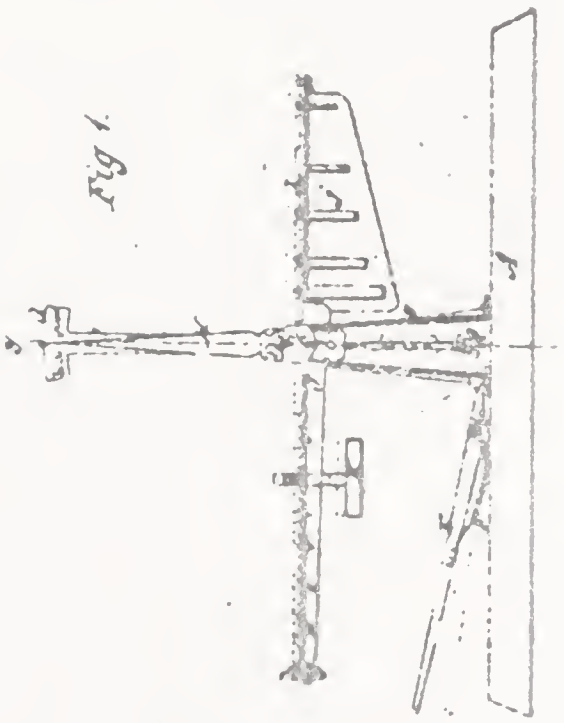
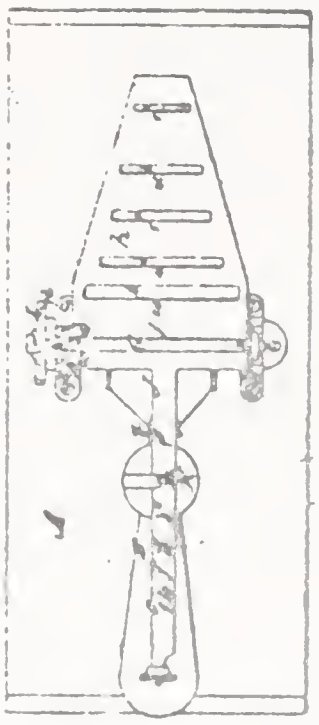


Fig 3.



UNITED STATES PATENT OFFICE.

FERDINAND J. HERPERS, OF NEWARK, NEW JERSEY.

BALANCE FOR DETECTING COUNTERFEIT MONEY.

Specification of Letters Patent No. 18,973, dated December 29, 1857.

To all whom it may concern:

Be it known that I, F. J. HERPERS, of Newark, in the county of Essex and State of New Jersey, have invented a new and improved Implement or Device for Detecting Counterfeit Gold Coin; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1. is a longitudinal vertical section of my improvement, *x*, *x*, Fig. 2, showing the plane of section. Fig. 2. is a transverse vertical section of ditto, *y*, *y*. Fig. 1, showing the plane of section. Fig. 3, is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists of a new article of manufacture viz., a coin balance, constructed substantially as hereinafter described.

To enable others skilled in the art to make and use my invention I will proceed to describe it.

A represents the base of the implement, and B, B, are two uprights attached to the base.

C, C, represent two vertical rods which are placed at the inner sides of the uprights B, B, one to each. The lower ends of these rods are connected to the ends of a horizontal rod D, which is attached to the inner end of a lever E, said lever being pivoted at *x*, to the base A, and having a spring F, underneath it, the spring keeping the outer end of the lever elevated, and consequently the inner end depressed.

To the upper ends of the rods C, C, rectangular blocks *b*, *b*, are attached. These blocks *b*, fit in the uprights B, B, which are constructed of metal and bent or formed of three sides so as to serve as guides for the blocks—see Figs. 1 and 3. The blocks *b*, *b*, are also constructed of metal and have each a triangular opening or bearing *c*, made through them to receive the ends of a bar G, which are made in triangular or knife-edged form, similar to the pivots of all scale beams. To one end of the bar G, an index H, is attached and a vertical bar I, is suspended to said bar near the index H, the lower end of the bar I, being heavier than its upper part so that it will be retained in a vertical position, and the upper end of said bar having a segment *d*, attached to it with a vertical mark *e*, made at its center—see Fig. 1.

To the bar G, the scale beam J, is attached. One end or part, *f*, of this scale beam is graduated or has small holes *g*, made in it to receive the point of a weight K, said holes being made in the beam at proper points and numbered corresponding to the different denominations of U. S. gold coin, see Fig. 3. The opposite end of the scale beam is formed of a plate *h*, having slots *i*, made in it, said slots corresponding in length and width to the several U. S. gold coins, see Fig. 3. To the under side of the plate *h*, a vertical plate *j*, is attached, said plate being slotted vertically, the vertical slots corresponding in width to the slots *i*, and being in line with them, see Fig. 1.

The knife-edged ends of the bar G, fit in V-shaped notches *k*, in the upper ends of the uprights B, B, when the implement is not in use—the ends of the bar being kept in the notches *k*, by the spring F. By this means the bearings and knife edges of the bar G, are kept in order or prevented from being injured by unnecessary wear.

The implement is used as follows. Suppose a $2½ gold piece is to be tested. The coin is placed in the slot marked 2½ in the plate *h*, said coin also fitting in the slot in the plate *j*, directly in line with the slot in the plate *h*. If the coin fits snugly in these slots it is of proper dimensions. The outer end of the lever E, is then depressed and the blocks *b*, are elevated so that the bearings *c*, are raised above the upper ends of the uprights B, B, and the ends of the bar G raised above or out of the notches *k*, in the upper ends of the uprights B, B. The scale beam J, then rests in the bearings *c*, and the point of the weight K, being placed in the point marked 2½ on the end or part *f*, of the scale beam, the coin will more than counterbalance the weight and the index H, will be moved to the right of the mark *e*, on the segment *d*, and the coin is proved to be genuine.

Counterfeit coin, if of the same size as the genuine ones, are necessarily lighter, because the alloy is of less specific gravity than gold. If a spurious coin be of the same weight as a genuine one, the spurious coin

necessarily be larger, consequently by measuring and weighing the coin spurious ones may be readily detected.

I have graduated the scale beam so that new genuine coins will more than counterbalance the weight K, in order to allow for a deficiency in weight occasioned by wear, but the wear will never be so great as to prevent genuine coins from exactly balancing the weight and causing the index to be at the point *c*, on the segment. If a coin be not sufficiently heavy to do this, it is spurious.

I have practically tested the above described machine as follows: I took two pieces of gold, one being 21⅜ carats U. S. standard, and the other 18 carats. These two pieces I worked into wires exactly of the same thickness. The piece of 21⅜ carats I made of the same weight as a half-eagle or $5 gold piece. The piece of 18 carats wire was then cut so as to correspond exactly in size with the wire of 21⅜ carats. I then weighed the two pieces of wire and found the wire of 18 carats to be 18 grains lighter than the one of 21⅜ carats, thereby showing a difference of 3⅜ grains on the dollar. If, therefore, an allowance of one grain on the dollar be made for the wear of gold coin, to which extent it probably will not wear, as only the projecting surfaces are exposed, the implement will detect base coin made of as good a quality or of as fine gold as profit would permit.

I am aware that there is in some coins a small difference in size owing to the different degrees of pressure given it by coining, but this difference is so minute, and the difference between the genuine coin and 18-carat gold so great, being (after a deduction of one grain on the dollar for wear) 2⅜ grains that a well constructed implement will detect any base coin. The accuracy, therefore, of an implement for the purpose of detecting base coin is important, and by having the implement constructed or arranged as shown so that the beam is not allowed to rest in its bearings when not in use, the bearings are kept in perfect order, being subjected to wear only when the implement is used.

I am aware that implements have been previously invented for effecting the same purpose as the one herein described. I therefore do not claim detecting spurious coin by weight and measurement irrespective of the construction of the implement as described, but to the best of my knowledge and belief, it is new in balances of this description to arrange the knife edges as herein described, so that the knife edges can only come in contact with their bearings at the moment of weighing.

I do not claim to be the inventor of sliding or movable supports for the knife edges, as this feature is seen in jewelers' scales, apothecaries' scales, etc. But in all of these, it will be found that the knife edges rest upon their bearings when the scales are not in use. Consequently every concussion or jarring in the apartment or building injures the knife edges and bearings, and after a time the scales become inaccurate. This can never happen in my improvement, because the knife edges never come in contact with their bearings, except when the lever is pressed, and they wholly separate and are held steadily apart when the lever is released. It is also new to have vertical pockets of the exact size of the coins, upon the fulcrum bar, which pockets serve as measures of the dimensions of the pieces of money, and also indicate the exact spot where the coin is to be placed by the operator. I do not, however, claim, broadly, the placing of gages or receptacles upon balances. But no balances have ever been arranged with a number of vertical pockets in close proximity. The apparatus is thus made very compact and highly convenient.

I do not claim to be the inventor of swinging index bars for weighing machines; and therefore I disclaim the same as used in my apparatus. Their employment is not essential as my instrument can be made and used either with or without the same, as may be desired.

No coin balance like mine has ever been known or used, to the best of my knowledge and belief. It is therefore a new article of manufacture, and possesses useful qualities not seen in any other analogous article.

I claim and desire to secure by Letters Patent, as a new article of manufacture,—

A coin balance when constructed as herein described.

FERDINAND J. HERPERS.

Witnesses:

JAMES F. BUCKLEY,

W. TUSCH.

(No Model.)

C. H. FITCH.

PRESCRIPTION SCALE.

No. 327,152. Patented Sept. 29, 1885.

Fig. 1.

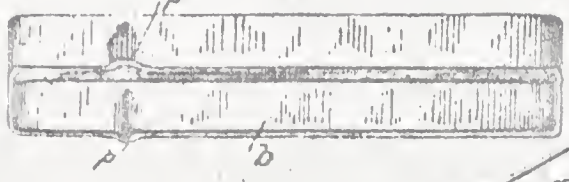


Fig. 6.

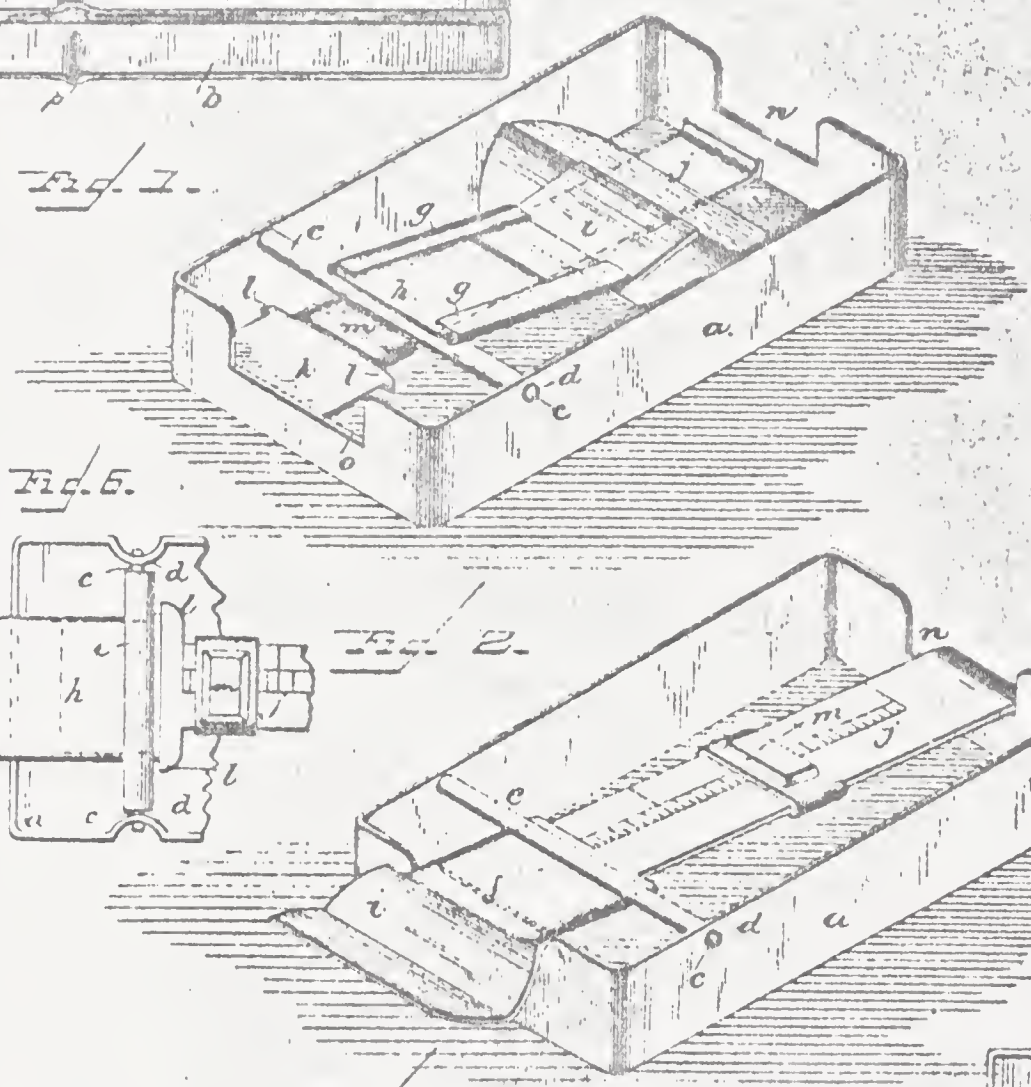


Fig. 2.

Fig. 5.

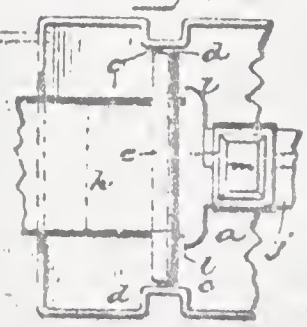


Fig. 3.

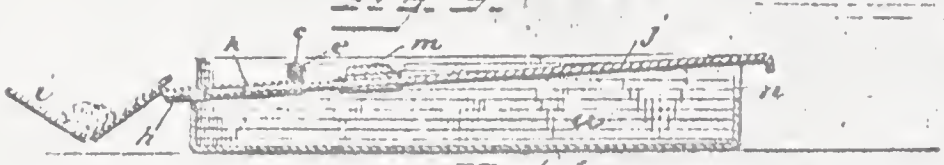
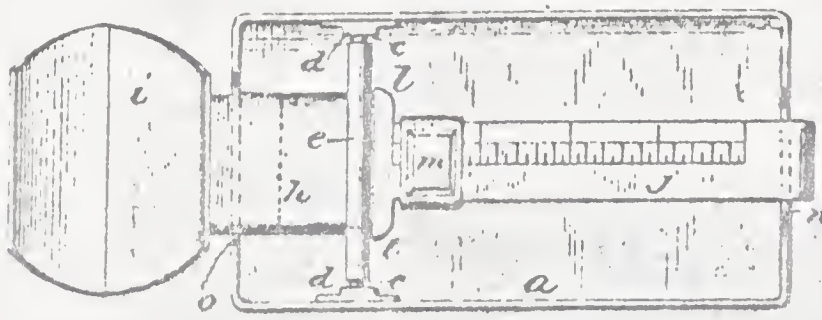


Fig. 4.



WITNESSES
F. L. Ourand
Geo. N. Pinckel

INVENTOR:
Calvin H. Fitch
by Wm. N. Pinckel
his Attorney.

UNITED STATES PATENT OFFICE.

CALVIN H. FITCH, OF MIDDLETOWN SPRINGS, VERMONT, ASSIGNOR OF ONE-HALF TO BYRON S. FITCH, OF RICHMOND, VIRGINIA.

PRESCRIPTION-SCALES.

SPECIFICATION forming part of Letters Patent No. 327,152, dated September 29, 1885.

Application filed January 19, 1885. (No model.)

To all whom it may concern:

Be it known that I, CALVIN H. FITCH, a citizen of the United States, residing at Middletown Springs, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Prescription-Scales, of which the following is a full, clear, and exact description.

The object of this invention is to provide portable balances or scales that may be carried in a person's pocket for the use of physicians and others, and for families for weighing small quantities of medicine or small divisions of other articles or substances. In order to secure accuracy, that quality so indispensable, particularly in medicine, I deem it essential that the balances shall be of as few parts as possible, and that a permanent pivot be provided for such balances. In order to get the scales within a compass compatible with easy portability some portions must be capable of disjointing, and I find that the member that may be so detached with a minimum loss, and, in fact, no detriment to accuracy, is the graduated arm and weight; hence in constructing my scales I employ a casing or box in which the pan and socket piece are fixed to a fulcral pin or shaft permanently hung in said casing, and adapted to be turned out from such box for use, and to be reversed into the box when not in use, said pan having facilities for readily receiving a detachable graduated arm and movable weight thereon constituting the beam, and shaped to preserve the balance, and also permit the ready discharge of its contents, the box forming a base or pedestal for the scales, and being provided with a suitable cover.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view of the scales in place in the box, the cover being shown to the left. Fig. 2 is a perspective view of the scales ready for use. Fig. 3 is a vertical longitudinal section of the same; Fig. 4, a top plan view with a modification in the bearings for the fulcral pin, and Figs. 5 and 6 plan views of other modifications of the bearings, the scale of the drawings being somewhat enlarged over the actual size.

The box or casing *a* is made preferably of metal, and rectangular or oblong in shape, struck up in dies or otherwise formed, and its cover *b* is similarly formed and readily detachable; or said box and its cover may be constructed of wood, paper, or other suitable material. *c* is the fulcral pin or shaft, preferably made of steel wire drawn with a knife-edge, as shown, and having its bearings in holes *d* in opposite vertical sides of the box, near one end of such box. This pin may be made from a solid piece of steel or other suitable metal with knife-edge shouldered journals at each end, (see Fig. 5,) obtained by reducing the size of the pin or shaft at its ends; but, preferably, as more economical and to secure a more perfect bearing, the pin is passed through a tube, *e*, and said tube is equal in length to the distance between the sides of the box within the box, while the pin *c* is as much longer as is the outside width of the box greater than its inside, or a little more than that, so as to insure permanence of the pin in its bearings, and prevention of so much longitudinal movement as would permit the accidental disengagement of the pin and its bearings.

To the tube *e* (or to the pin *c*, if the shaft is used without the tube,) is secured a strip of metal, *f*, the longitudinal edges *g* of which are turned down, and then toward each other parallel with the piece *f*, to form a socket or sockets, *h*; and to the free end of said socket-piece *f* is affixed the scale-pan *i*, which may be round, flat, or any shape used for scales; but I prefer to make it V shape in cross-section, so as to preserve the "balance" of the scales, and obviate the necessity for adjustment, and, furthermore, to facilitate the emptying of the pan of its contents.

The pan and its socket-piece may be made of one piece of sheet metal stamped to shape, or cut and shaped in dies, or it may be formed of two pieces suitably united, as by solder.

Instead of having the bearings for the fulcral pin in the sides of the box, they may be separate pieces, something like sheet-metal-pail bail ears secured to the sides within the box, as indicated in Fig. 4, or the sides of the box may be indented, as in Figs. 5 and 6, either angularly or in an arc of a circle to form such bearings.

The scale beam and pan may be made of one solid piece, or the scale beam and pan may be made of separate pieces, and these soldered or fastened together in any other suitable manner, and the pan and scale-beam may be so adjusted as to work all within the box; but preferably, the scale-beam or graduated arm *j* has a tenon, *k*, to fit the socket *h* of the socket-piece of the pan, and it is limited in its inner movement in said socket, and truly registered therein by lateral lugs *l*. This scale-beam is about the length of the box inside. It is provided with a suitable counterpoise or weight, *m*, sliding thereon by the provision of a loop on its under side embracing the said beam, as indicated in Figs. 1, 2, and 3.

The vertical end walls of the box are cut out at *n* and *o* to permit the movement of the scales when put together for use.

When the pan is reversed, or turned into the box, as in Fig. 1, the knife edge is reversed with it, and consequently it is saved the wear upon it, which is more injurious in disuse ordinarily than when in use.

When the parts are connected, as in Fig. 2, the box forms a base or pedestal for the scales, and they are in this position ready for use.

The openings *n* and *o*, while permitting free play of the scales, preclude all undue lateral motion, and they are usually no deeper than the flange or rim of the cover, so that the cover when in place will completely inclose all openings in the box.

When the bearings for the fulcral pin are in the sides of the box themselves, the cover will be made with recesses *p* to cover them; but these additions to the cover are not necessary when such bearings are used, as shown in Figs. 4, 5, and 6.

The pan may be unloaded by catching up the box and scales together and tipping them sidewise; and inasmuch as the pan from its V shape will compel the load to seek its bottom angle, and thus preserve the balance without deviation and the use of extraneous means to this end, so the load may be readily discharged in a compact mass.

I desire to lay special stress on making the pan a fixture, for thus it obviates any probability of losing said pan and greatly facilitates the manipulation of the device and overcomes the necessity for any adjustment of the pan to balance it.

I propose putting these scales on the market nickel-plated, or in polished brass, or the like, and to supply each with a spatula and a medicine-dropper.

I do not confine this invention simply to a scale for weighing small quantities, but scales may be made on this principle of any capacity, and may be made portable or stationary.

What I claim is—

1. A scale comprising a box having fixed sides provided with bearings, a scale-pan provided with a tube, *e*, and a bearing pin secured therein, whereby the pan is permanently hung in the said bearings, a scale-beam connected with such pan, and a movable cover for the box to inclose the pan, bearings, and beam within the box, substantially as described.

2. A prescription-scale comprising a covered casing or box having fixed sides, a scale-pan permanently hung in the said fixed sides, and rotatable on its bearings, so as to be capable of being turned into and out of the box, and a scale beam adapted to be connected with and disconnected from such pan, substantially as described.

3. A box, a scale-pan provided with a socket piece, and a knife-edge fulcral pin secured in bearings in the sides of said box, and rotatable in said bearings to adapt it to be turned into and out from said box, and a detachable scale-beam provided with a tenon to engage the socket-piece of the pan, combined substantially as described.

4. A box provided with bearings, a fulcral pin rotatable in said bearings, and a scale-pan secured to said pin and adapted to be turned into or out from the box, combined with a detachable scale-beam, substantially as described.

5. A box provided with bearings, a fulcral pin having a knife-edge and rotatable in said bearings, and a scale-pan rigidly affixed to said pin and adapted to be turned out of or into said box to bring the knife-edge of the pin into operative and inoperative positions, respectively, with respect of its bearings, substantially as described.

6. A box provided with side bearings, a fulcral pin having a knife-edge and rotatable in said bearings, a scale-pan and a tube attached to the socket-piece extending from said pan through which the fulcral pin extends to its bearings on either side, substantially as described.

7. The scale-pan made V shape in cross-section combined with a fulcral pin having permanently-fixed bearings, and a scale-beam, whereby the article or substance to be weighed is compelled to a given center, and a true balance thus preserved, substantially as described.

8. The box *a*, provided with openings *n o* in its ends, side bearings, and a cover combined with the pan, its socket-piece, fulcral pin, and detachable tenoned scale-beam and weight thereon, substantially as described.

9. The combination, with the socketed scale-pan, of the tenoned scale-beam having stop-lugs *l* co-operating with the said socketed pan to insure the correct position of the beam in the socketed pan, substantially as described.

In testimony whereof I have hereunto set my hand this 17th day of January, A. D. 1885.

CALVIN H. FITCH.

Witnesses:
BYRON S. FITCH,
H. SWINEFORD.

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ASSIGNOR TO FRANCIS M. SMITH, OF LAKE, ILLINOIS.

IMPROVEMENT IN DETECTERS OF COUNTERFEIT COIN.

Specification forming part of Letters Patent No. **187,936**, dated February 27, 1877; application filed January 12, 1877.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Detecters of Counterfeit Coin, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

Figure 1 is a perspective top view of my detecter. Fig. 2 is a side view in the position which it occupies when testing a counterfeit coin. Fig. 3 is a side view in the position it occupies when testing a genuine coin.

The instrument is simply a plate of metal, or other suitable material, (in size and shape similar to an ordinary paper-knife,) with a right-angular bend in or near the middle, as shown in the drawings. On one side of this right-angular bend or fulcrum the plate is plain, with its outer end, when the instrument is not in use, resting on the table, counter, desk, or other level support. On the other side of the right-angular bend or fulcrum the plate contains slots, as per drawings, for coins of different denominations to be tested. The slotted end of the plate contains, say, four places for United States coin, marked respectively ten, twenty, twenty-five, fifty, corresponding to the denominations, in cents, of the most common United States silver coins, and may contain a slot for any coins, United States or foreign, silver or gold. These slots are of such nicely and properly graduated distances from the right-angular bend or fulcrum, according to metrical rules and tests, that when a genuine coin is placed in its proper receptacle, it barely tips the plate on its angular bend or fulcrum until the slotted end rests on the table or other support, as shown in Fig. 3 of the drawings. Consequently, when a counterfeit coin is placed in the slot corresponding to its denomination, it is immediately detected by its light weight in not tipping the balance, or its greater bulk in filling the slot, as the spurious metal, as is well known, is almost invariably lighter than the genuine, and the coin must therefore be necessarily lighter or larger.

What I claim as new and as my invention, and desire to secure by Letters Patent, is—

The coin-weighing plate C D, provided with the right-angular bend A B, and slotted at D, substantially as described, and for the purpose set forth.

JOHN A. THOMPSON.

Witnesses:

F. J. SEYBOLD,

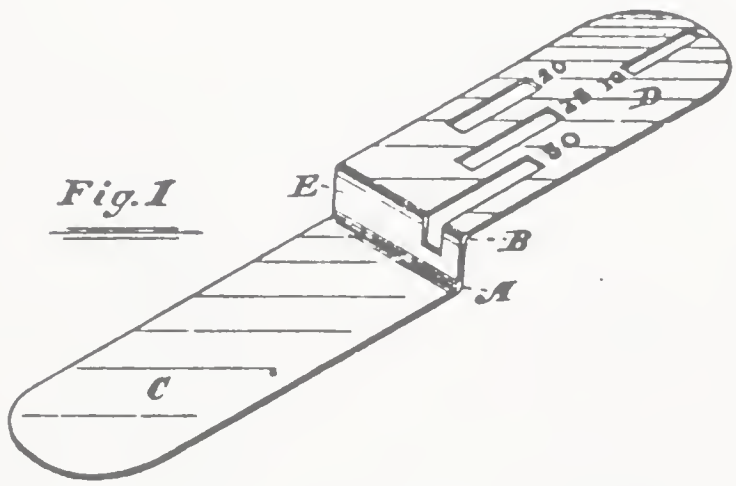
A. J. KIDD.

J. A. THOMPSON.

DETECTORS OF COUNTERFEIT COIN.

No. 187,936. Patented Feb. 27, 1877.

Fig. 1



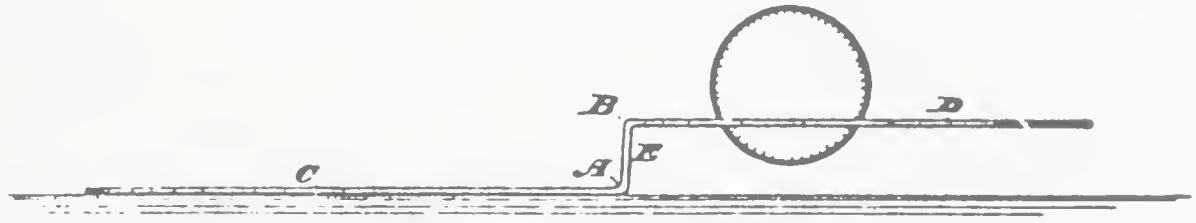


Fig. 2

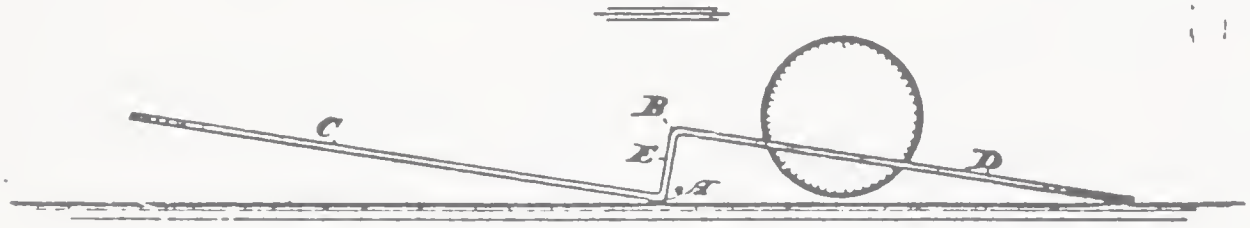


Fig. 3

Attest:

W. F. Baker

A. P. Ted

INVENTOR:

John A. Thompson

UNITED STATES PATENT OFFICE

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN COUNTERFEIT-COIN DETECTERS.

Specification forming part of Letters Patent No. 189,284, dated April 3, 1877; application filed February 23, 1877.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Counterfeit Coin Detecters, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention; Fig. 2, a side view of my invention when testing a genuine coin. Fig. 3 is a sectional view on the line *y y*, Fig. 1.

This instrument can be struck out completed (except bending the flanges F) by one stroke of a die.

The object of the invention is the detection of counterfeit coin. Counterfeit coin are usually lighter than genuine, and on this fact the invention is based.

F are flanges, on which the instrument rests. These flanges F are bent from the bar or plate C at an angle of from seventy to eighty degrees, as being a suitable angle, but may be at a greater or less angle. The part K of the plate C K that projects beyond the flanges F is supplied with ears or lugs D, arranged in pairs. Each pair is so constructed as to clasp a coin of the denomination designed for it.

The space designed for a United States coin of a given denomination is suitably indicated on the bar K.

The beam or bar C K is balanced, so as to rest on the flanges F, as shown in Fig. 1. When a genuine United States silver coin is placed in its proper receptacle the bar C K will be tipped down, as shown in Fig. 2, till the point E rests on the table or support L, the bar C K turning on the point H of the flanges F.

If a genuine coin of a given denomination is placed in the receptacle corresponding to such denomination the bar K will be tipped, as shown in Fig. 2.

If a counterfeit coin of the proper denomination is placed in either receptacle the instrument remains resting on the flanges F, as shown in Fig. 1.

What I claim as new, and wish to secure by Letters Patent is—

In a counterfeit coin detecter, the bar C K, provided with the flanges F, and lugs D D, substantially as shown and described, and for the purpose set forth.

JOHN A. THOMPSON.

Witnesses:

HENRY C. STRONG,

F. J. SEYBOLD.

J. A. THOMPSON.

COUNTERFEIT COIN DETECTOR.

No. 189,284. Patented April 3, 1877.

Fig. 1

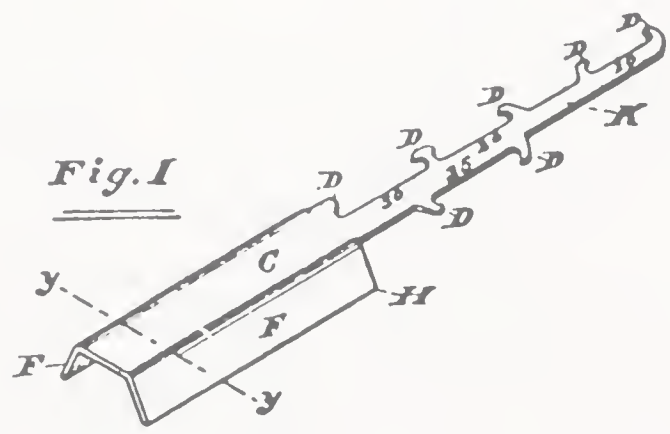


Fig. 2

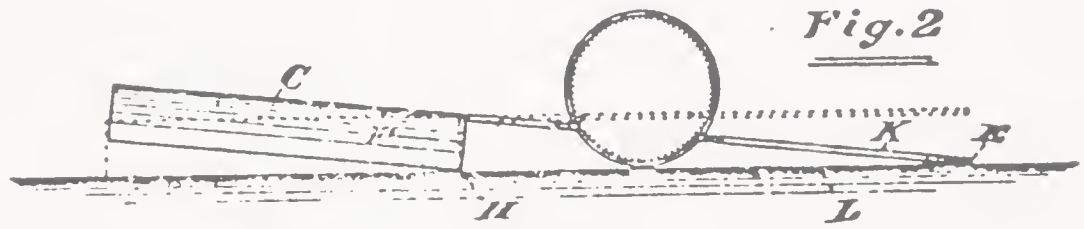
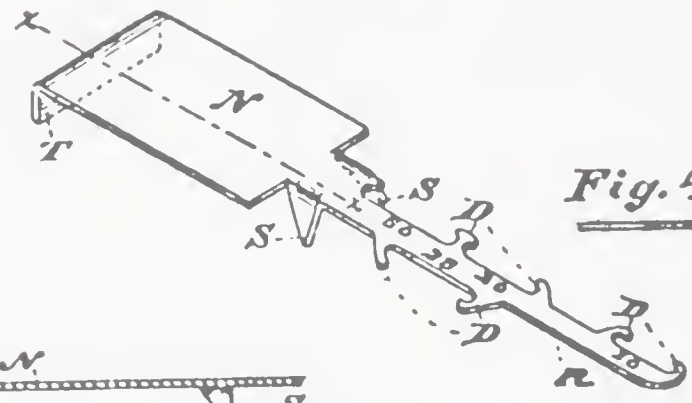


Fig. 3

Fig. 4



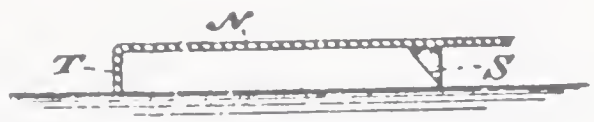


Fig. 5

Attest

W^m. F. Baker

Francis J. Colby

INVENTOR

John A. Thompson

UNITED STATES PATENT OFFICE.

JOHN A. THOMPSON, OF CHICAGO, ILLINOIS.

COUNTERFEIT-COIN DETECTER.

SPECIFICATION forming part of Letters Patent No. 224,807, dated February 24, 1880.

Application filed January 13, 1880.

To all whom it may concern:

Be it known that I, JOHN A. THOMPSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Counterfeit-Coin Detecters; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which the figure represents a perspective view of a counterfeit-coin detecter embodying my improvements.

The object of my invention is to provide a device that will readily and surely detect counterfeit from genuine coin; and my invention consists in the construction of the device or detecter, as hereinafter described and claimed.

It is well known that when coin is made wholly or in part of base metal it is lighter than genuine coin of the same size, and if made of the same weight it must necessarily be thicker or larger in diameter than the genuine coin.

In the drawing, A represents a plate of sheet metal of known gage and weight, preferably of brass or German silver, and may be of any desired dimensions, and which is first stamped from a flat piece of metal, and its depending and tapering sides or flanges afterward formed as shown, so as to form the fulcrum for the plate.

In the center of the plate, and running from end to end, is a struck-up rib, *a*, which stiffens and strengthens the plate and divides it into two parts, one side of which is adapted and marked for gold coin and the other for silver. On either side of the rib *a* is a series of slots or perforations, *b*, each of which is of the same width for about one-third of its length, and then gradually increasing in width, so as to form a tapering slot toward the fulcrum of the plate, said slots being of a width sufficient to receive and hold the coin of the desired denomination without allowing it to pass wholly through.

Each of the slots *b* is made wider at its end nearest the fulcrum of the plate, so as to readily receive the coin, while its other end is made of a width corresponding to the thickness of the coin, so that when a genuine coin is placed and held within the slot corresponding to its denomination it will cause the plate to tip down over the fulcrum *c* nearest to such coin, the fulcrum *c* being previously adjusted for that purpose. If the coin is made thicker than and so as to correspond in weight with the genuine coin it will not pass within the desired slot to its proper place, and will, consequently, fail to tip the plate on its fulcrum.

It will be observed that the flanges *d* are made tapering from at or about their fulcrums to their ends, and that the plate A is provided with two fulcrums, *c*, which are formed out of and as a part of the flanges *d*. The space *e* between the fulcrums *c* need not necessarily be cut out, and the notches *f* may be filed away (more or less) for the purpose of adjusting the fulcrums to the plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, substantially as shown and described.

2. In a counterfeit-coin detecter, the plate A, provided with the tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

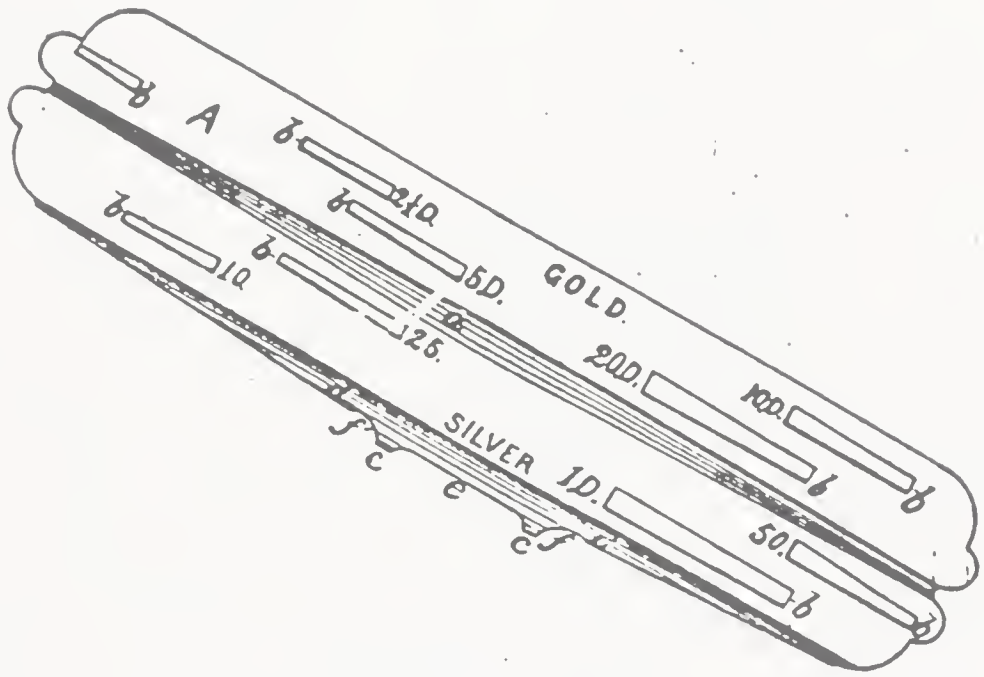
3. In a counterfeit-coin detecter, the plate A, provided with rib *a*, tapering slots *b*, tapering flanges *d*, and fulcrums *c*, substantially as shown and described.

JOHN A. THOMPSON.

Witnesses:
WM. ZIMMERMAN,
N. COWLES.

J. A. THOMPSON.
Counterfeit Coin Detector.

No. 224,807. Patented Feb. 24, 1880.



WITNESSES.
Wm Zimmerman
Chas H. Wood

INVENTOR.
John A. Thompson
By Bridley & Co
Atty's

DESIGN.

J. T. McNALLY & W. H. HARRISON.

SCALES.

No. 12,795. Patented Feb. 28, 1882.

Fig. 1.

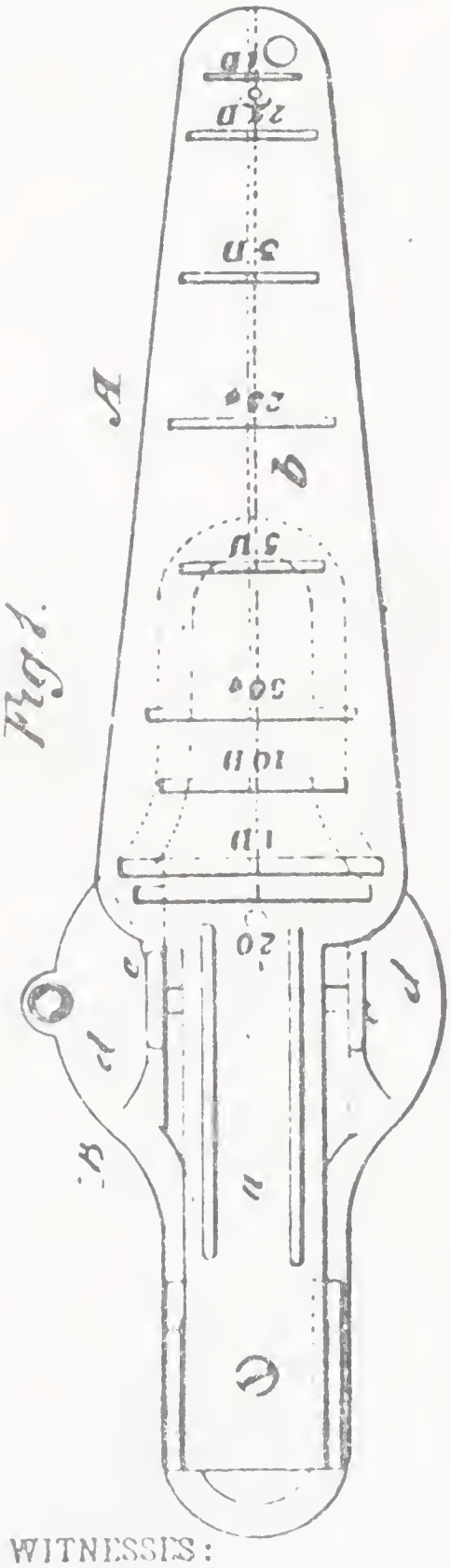
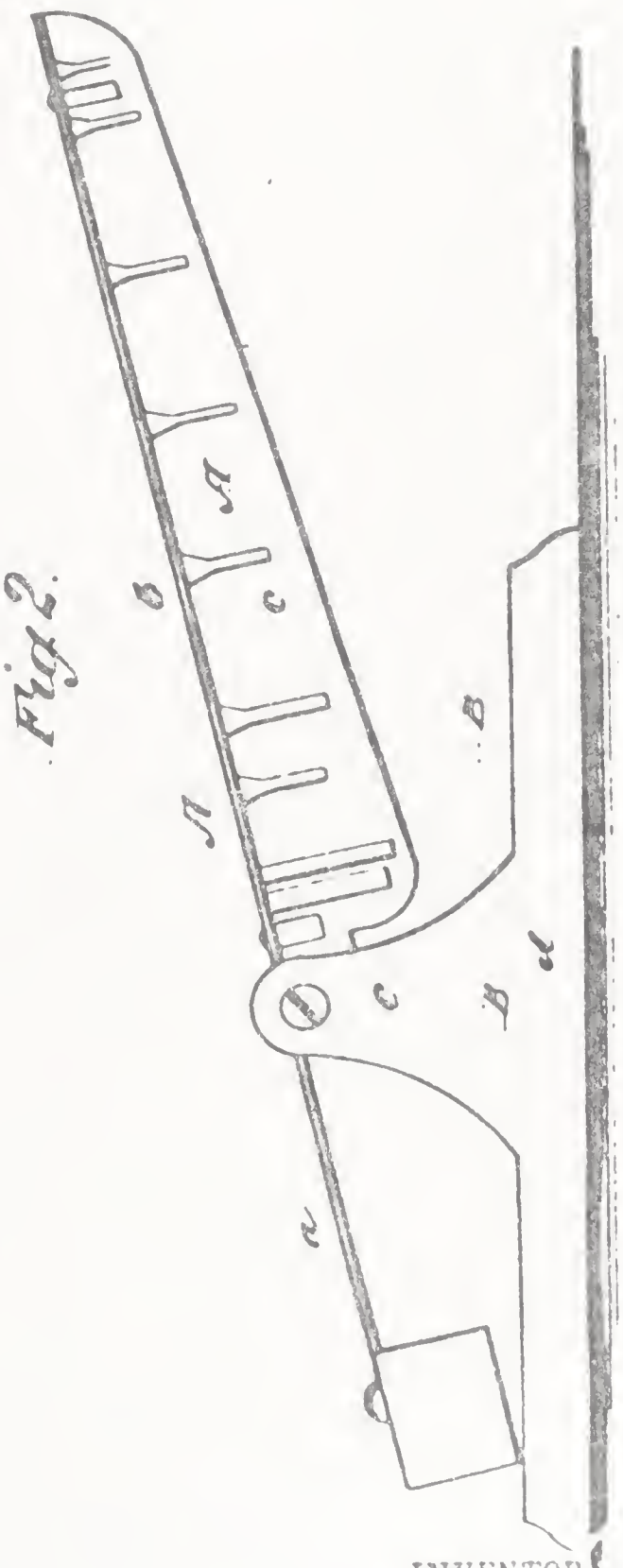


Fig. 2.



WITNESSES:

INVENTOR:

BY

UNITED STATES PATENT OFFICE.

JAMES T. McNALLY AND WALTER H. HARRISON, OF NEW YORK, N. Y.

DESIGN FOR SCALES.

SPECIFICATION forming part of Design No. 12,796, dated February 28, 1882.

Application filed January 6, 1882. Term of patent 7 years.

To all whom it may concern:

Be it known that we, JAMES T. McNALLY and WALTER H. HARRISON, of the city, county, and State of New York, have invented a new and Improved Design for Scales, of which the following is a full, clear, and exact description.

Reference is to be had to the following drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

In the drawings, Figure 1 is a plan view, and Fig. 2 a side view, of our newly designed scale.

A represents the beam, and B its supporting base. *a* is a portion having parallel sides, and *b* a portion having tapered sides, rounded end, and rounded at the vertices of the angles. *c* is a depending rib or flange on the under side of the beam. The whole presents an ornamental appearance to the eye. The base B is oblong in the direction of the length of beam A, and is widened at its mid-length by rounded side extensions, *d d*, at which place it is also formed with vertical flanges *e e* for support of the beam.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The design for scales herein shown and described, which consists in the oblong base B, having side extensions, *d*, and flanges *e*.

JAS. T. McNALLY.
W. H. HARRISON.

Witnesses:
GEO. D. WALKER,
C. SEDGWICK.

DESIGN.

J. T. McNALLY & W. H. HARRISON.

SCALES.

No. 12,795. Patented Feb. 28, 1882.

Fig 1.

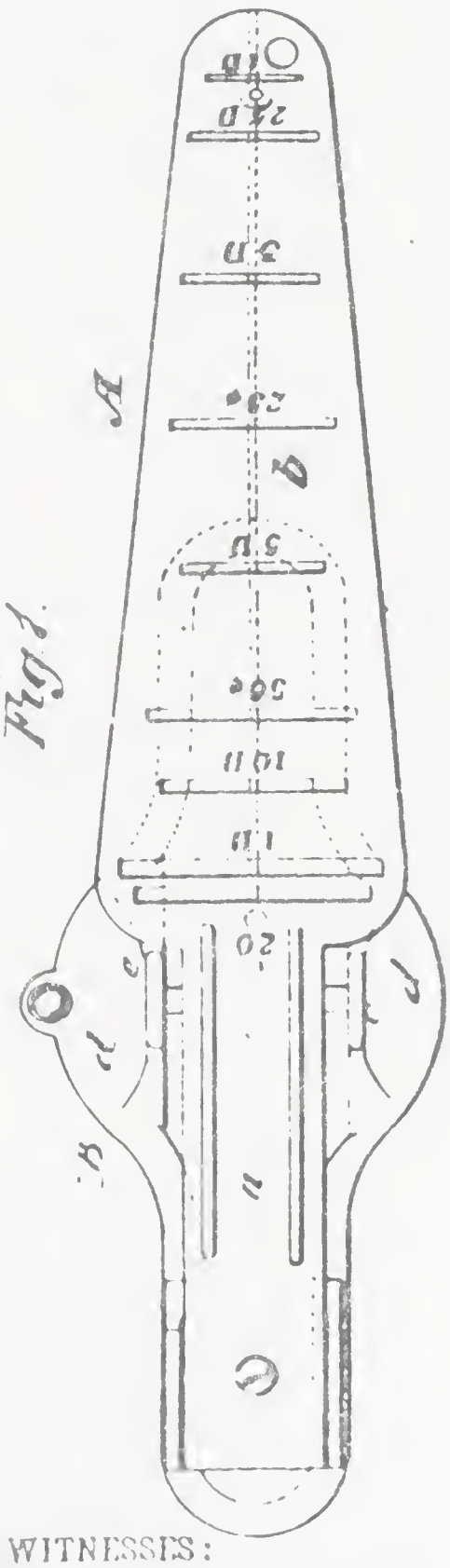
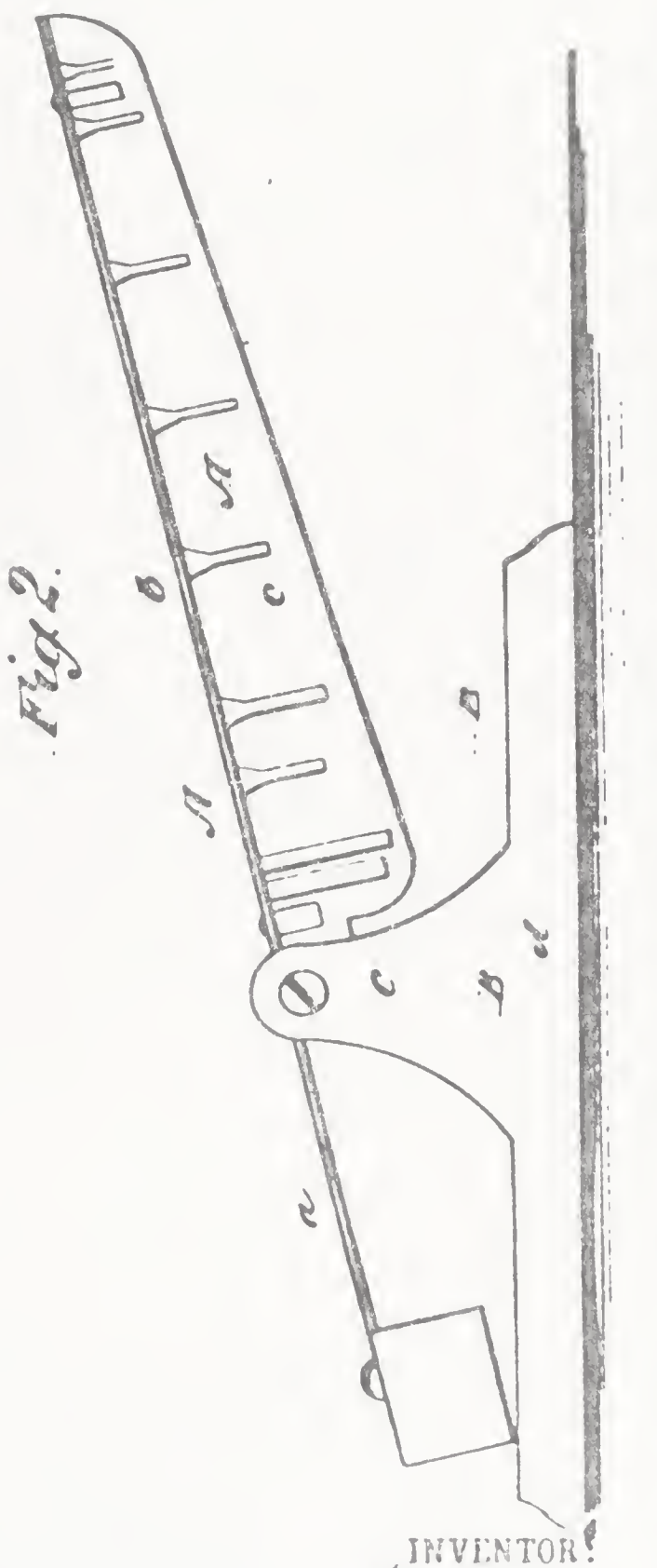


Fig 2.



WITNESSES:

INVENTOR:

BY

UNITED STATES PATENT OFFICE.

JAMES T. McNALLY AND WALTER H. HARRISON, OF NEW YORK, N. Y.

DESIGN FOR SCALES.

SPECIFICATION forming part of Design No. 12,795, dated February 28, 1882.

Application filed January 6, 1882. Term of patent 7 years.

To all whom it may concern:

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Reference is to be had to the following drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

In the drawings, Figure 1 is a plan view, and Fig. 2 a side view, of our newly designed scale.

A represents the beam, and B its supporting base. *a* is a portion having parallel sides, and *b* a portion having tapered sides, rounded end, and rounded at the vertices of the angles. *c* is a depending rib or flange on the under side of the beam. The whole presents an ornamental appearance to the eye. The base B is oblong in the direction of the length of beam A, and is widened at its mid-length by rounded side extensions, *d d*, at which place it is also formed with vertical flanges *e e* for support of the beam.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The design for scales herein shown and described, which consists in the oblong base B, having side extensions, *d*, and flanges *e*.

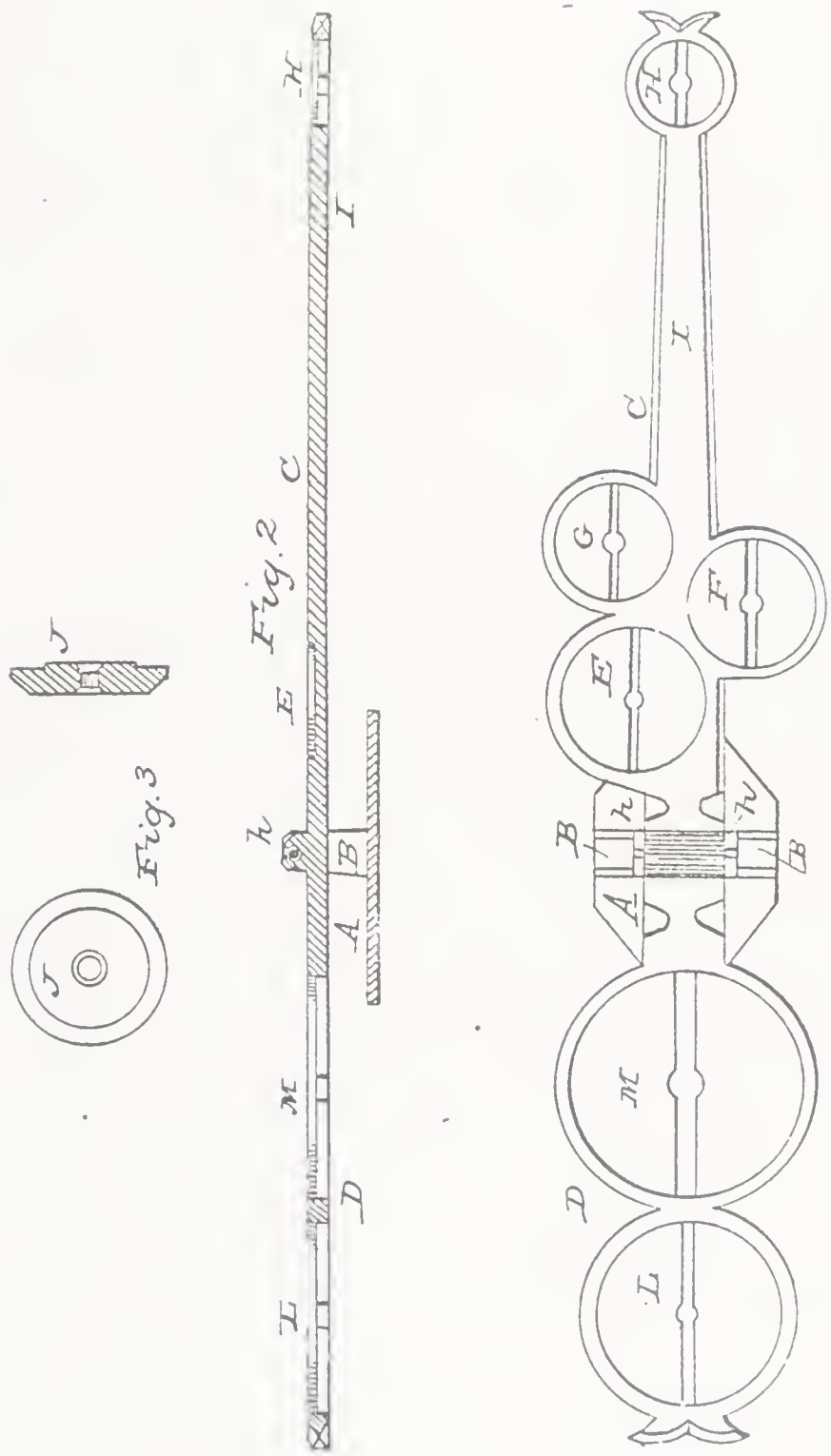
JAS. T. McNALLY.
W. H. HARRISON.

Witnesses:
GEO. D. WALKER,
C. SEDGWICK.

J. ALLENDER.

Coin Tester.

No. 13,840. Patented Nov. 27, 1855.



N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN ALLENDER, OF NEW LONDON, CONNECTICUT.

BALANCE FOR DETECTING SPURIOUS COIN.

Specification of Letters Patent No. 13,840, dated November 27, 1855.

To all whom it may concern:

Be it known that I, JOHN ALLENDER, of New London, in the county of New London and State of Connecticut, have invented a new and useful Apparatus for Proving Genuine and Detecting Spurious Coin; and I do hereby declare that the same is described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan. Fig. 2, a section of Fig. 1, cut through the center. Fig. 3, a plan and section of the weight.

The nature of my invention consists in a lever of a proper size and weight, with a fulcrum a proper distance from its center, which lever is provided with cavities in each arm of a proper size to receive the genuine coin arranged at such distances each side of the fulcrum as to weigh the smaller coins upon the lighter arm without additional weight, and the heavy coins two or more on the heavy arm with one weight, in one position, on the lighter arm.

In the accompanying drawings A is the base of a stand provided with two pillars B B which are perforated to receive the pivots *h h* of the weighing lever C, which may be made in the form represented or such other form as may be desirable, the short arm D being made of sufficient weight to weigh a five dollar gold piece if it is placed in the cavity or countersink E which is made just large enough to receive the genuine coin, or the three dollar gold piece in the cavity F, or the two and a half dollar gold piece in the cavity G, or the one dollar gold piece in the cavity H, all of which cavities are in the lighter arm I. These cavities are all made just large enough to receive the genuine coin and it is weighed without additional weight on the heavier arm. The weight J is made in the form represented and provided with a projection K fitted to the cavity H, and when placed in said cavity the lever C will weigh a ten dollar gold piece in the cavity L or a twenty dollar gold piece in the cavity M, each of which cavities are made just large enough to receive the genuine gold coins of the denomination named, and both of them are in the short and heavy arm of the lever C. There is a slot directly across the center of each of the cavities in which the coin is weighed just large enough to let the genuine coin pass through freely by its own weight so as to prove the coin by its size as well as its weight.

This apparatus can be made and sold cheaper than any other that will perform the same service with the same facility, and will be found a perfect protection to prove genuine and detect spurious coins which are either larger or lighter than the genuine.

I am aware that balances for proving coin have been made with two levers hung upon one fulcrum so arranged as to weigh all the coins upon one side of the said fulcrum, and when the larger coins were weighed the lever in which the small ones are weighed is turned to the opposite side of the fulcrum. Therefore I make no claim to instruments constructed with more than one lever and to weigh upon one side of the fulcrum only, but

What I do claim as my invention and desire to secure by Letters Patent, is—

A single lever of such a size and weight and provided with cavities or countersinks arranged at such distances each side of the fulcrum, as to weigh the smaller coins upon the lightest arm, without additional weight, and the larger coins two or more on the heaviest arm with one weight, in one position on the lighter arm.

JOHN ALLENDER.

Witnesses:

C. PRINCE,

G. C. STILLMAN.

G. M. HOPKINS.

COIN TESTER.

No. 188,637. Patented March 20, 1877.

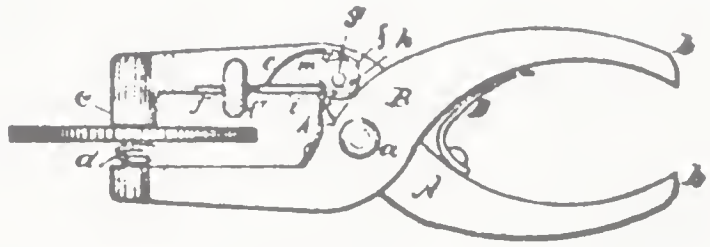


Fig 1.

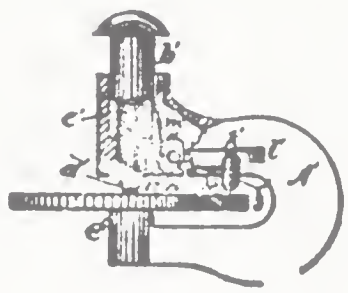


Fig 2.

WITNESSES:

Geo. M. Hopkins.

E. L. S. Tuliff

INVENTOR:

Geo. M. Hopkins.

UNITED STATES PATENT OFFICE.

GEORGE M. HOPKINS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND CYRUS L. TOPLIFF, OF SAME PLACE.

IMPROVEMENT IN COIN-TESTERS.

Specification forming part of Letters Patent No. 188,627, dated March 20, 1877; application filed February 12, 1877.

To all whom it may concern;

Be it known that I, GEORGE M. HOPKINS, of Brooklyn, in the county of Kings and State of New York, have invented an Improved Coin-Tester, of which the following is a specification:

My invention consists in the combination of a clamp for holding coin and a spring-actuated hammer for striking the same, the object being to provide a simple, compact, and yet effective instrument for testing coins by ringing them by means of a hammer while they are held by a clamp.

In the drawing, Figure 1 is a side elevation of an instrument employing levers to clamp the coin. Fig. 2 is a side elevation of an instrument in which the coin is clamped by a follower.

A B are crossed levers, pivoted together at *a*, having the arms *b* formed into handles, which are thrown apart by the spring D. Upon the end of the lever A opposite its handle a boss, *c*, is formed, and to the end of the lever B opposite its handle a spiral spring, *d*, is attached. C is a hammer fixed to a spring-arm, *e*, that is attached to a disk, *f*, which is pivoted at *g* to the lever A. A pin, *h*, projects from the back of the disk *f*, and is pressed by a spring, *i*, that is secured in a recess in the lever A by a screw, *j*. A spring, *k*, that projects from the lever B, engages a notch cut in the disk *f* when the handles are forced together, and raises the hammer. The shoulder *l* of the disk *f* throws the spring *k* out of the notch in the disk when the hammer is raised, and the spring *i*, acting on the pin *h*, causes the hammer to descend. The spring-arm of the hammer strikes pin *m*, that projects from the lever A, as the hammer descends, causing it to rebound after striking the coin.

The coin to be tested is clamped between the boss *c* of the lever A and the spring *d*, attached to the lever B, by closing the handles together.

This operation not only clamps the coin, but also partly raises the hammer. The pressure on the handles is increased until the hammer is raised through its full stroke and tripped.

The sound emitted by the coin as it is struck by the hammer indicates its quality.

In Fig. 2 an instrument is shown differing in form from that above described, but acting on the same general principle.

A′ is a yoke or U-shaped frame, which is bored to receive the follower *b′*, and is provided with a boss, *c′*, upon which the coin rests. To the inner end of the follower *b′* a short spiral spring, *d′*, is attached, between which and the boss *c′* the coin is clamped. A spring, *e′*, is placed in the larger part of the bore of the frame A′, and presses the shoulder of the follower *b′*. *f′* is a hammer, fixed to a spring-arm, *g′*, that is attached to a disk, *h′*, which is pivoted at *i′* to the frame A′. A notch, *j′*, is formed in the disk *h′*, which receives a spring, *k′*, that is attached at *l′* to the frame A′. A spring, *m′*, is attached to the follower *b′*, and engages a notch, *n′*, in the disk *h′*. As the follower is pressed downward the disk is turned, and the hammer raised until the shoulder *o′* trips the spring *m′*, permitting the hammer to fall and strike the coin, as in the other case.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a clamp for holding coin and a spring-actuated hammer for striking the same, substantially as herein shown and described.

2. The combination of the levers A B, spring *d*, hammer C, and springs *k i*, substantially as herein shown and described.

3. The combination of the U-shaped frame A′, spring-follower *b′*, hammer *f′*, and springs *k′ m′*, substantially as shown and described.

GEORGE M. HOPKINS.

Witnesses:
H. M. HOPKINS,
C. L. TOPLIFF.

UNITED STATES PATENT OFFICE.

GEORGE M. HOPKINS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND CYRUS L. TOPLIFF, OF SAME PLACE.

IMPROVEMENT IN COIN-TESTERS.

Specification forming part of Letters Patent No. 188,637, dated March 20, 1877; application filed February 12, 1877.

To all whom it may concern;

Be it known that I, GEORGE M. HOPKINS, of Brooklyn, in the county of Kings and State of New York, have invented an Improved Coin-Tester, of which the following is a specification:

My invention consists in the combination of a clamp for holding coin and a spring-actuated hammer for striking the same, the object being to provide a simple, compact, and yet effective instrument for testing coins by ringing them by means of a hammer while they are held by a clamp.

In the drawing, Figure 1 is a side elevation of an instrument employing levers to clamp the coin. Fig. 2 is a side elevation of an instrument in which the coin is clamped by a follower.

A B are crossed levers, pivoted together at *a*, having the arms *b* formed into handles, which are thrown apart by the spring D. Upon the end of the lever A opposite its handle a boss, *c*, is formed, and to the end of the lever B opposite its handle a spiral spring, *d*, is attached. C is a hammer fixed to a spring-arm, *e*, that is attached to a disk, *f*, which is pivoted at *g* to the lever A. A pin, *h*, projects from the back of the disk *f*, and is pressed by a spring, *i*, that is secured in a recess in the lever A by a screw, *j*. A spring, *k*, that projects from the lever B, engages a notch cut in the disk *f* when the handles are forced together, and raises the hammer. The shoulder *l* of the disk *f* throws the spring *k* out of the notch in the disk when the hammer is raised, and the spring *i*, acting on the pin *h*, causes the hammer to descend. The spring-arm of the hammer strikes pin *m*, that projects from the lever A, as the hammer descends, causing it to rebound after striking the coin.

The coin to be tested is clamped between the boss *c* of the lever A and the spring *d*, attached to the lever B, by closing the handles together.

This operation not only clamps the coin, but also partly raises the hammer. The pressure on the handles is increased until the hammer is raised through its full stroke and tripped.

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Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a clamp for holding coin and a spring-actuated hammer for striking the same, substantially as herein shown and described.

2. The combination of the levers A B, spring *d*, hammer C, and springs *k i*, substantially as herein shown and described.

3. The combination of the U-shaped frame A′, spring-follower *b′*, hammer *f′*, and springs *k′ m′*, substantially as shown and described.

GEORGE M. HOPKINS.

Witnesses:

H. M. HOPKINS,

C. L. TOPLIFF.

April 11, 1933. F. E. FINCH 1,903,621

COUNT CHECKING DEVICE FOR PACKAGED COINS

Filed May 17, 1930

Fig. 1.

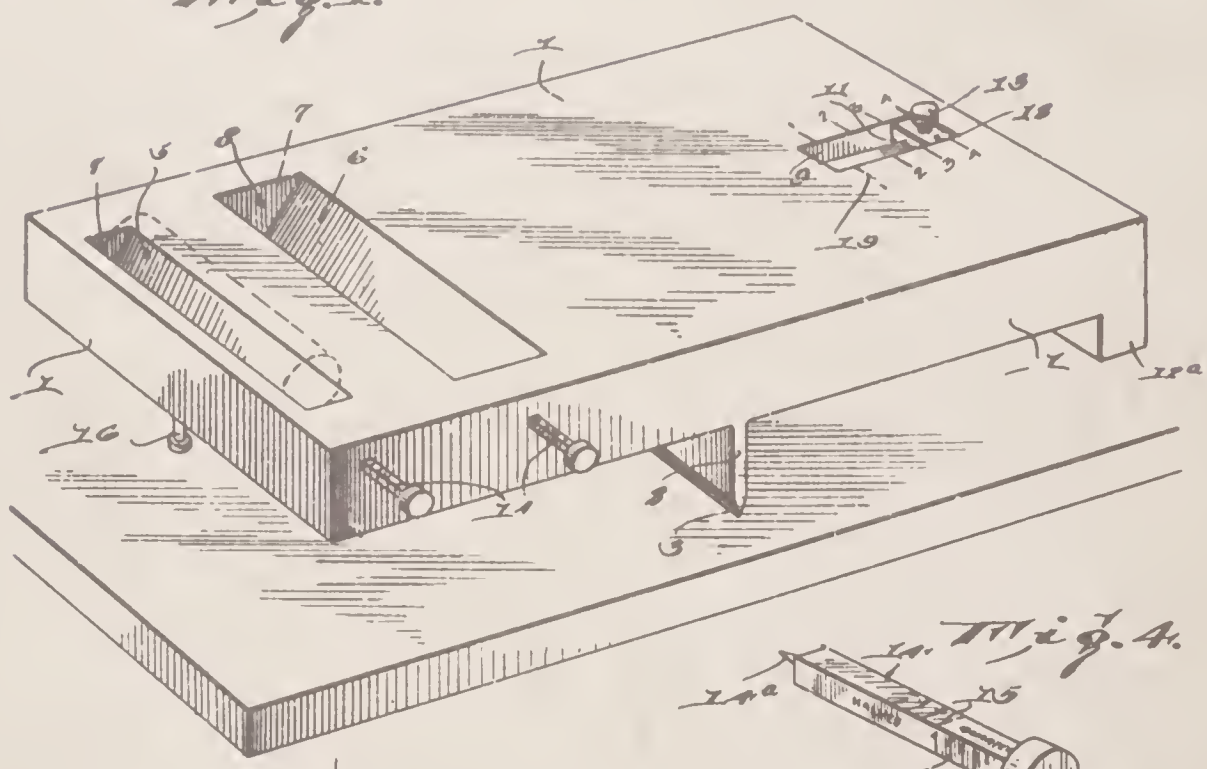


Fig. 4.

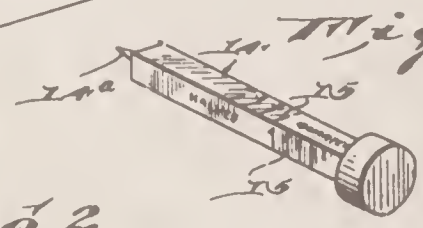


Fig. 2.

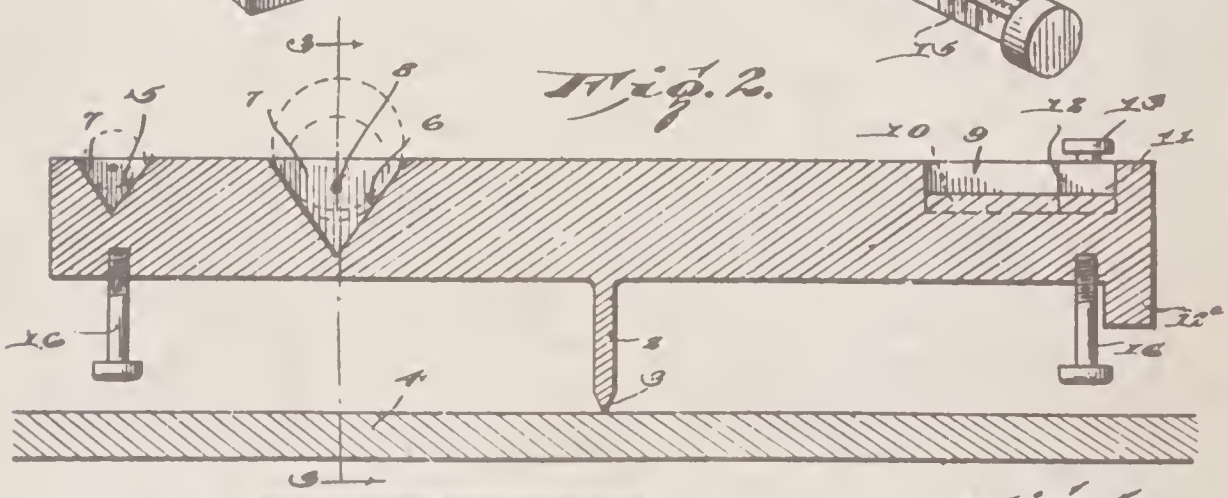


Fig. 3.

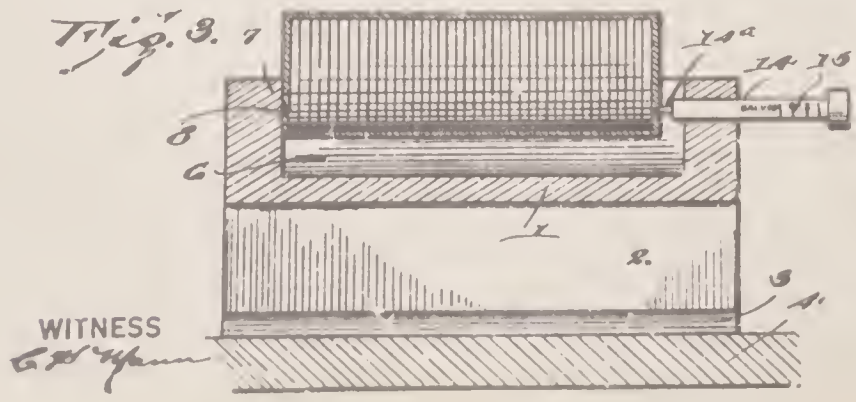
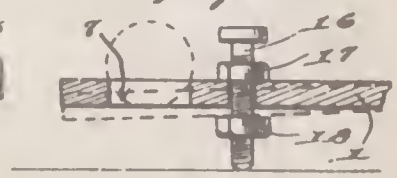


Fig. 5.



WITNESS

INVENTOR
F. E. Finch

BY Munn & Co.
ATTORNEY

Patented Apr. 11, 1933 1,903,621

UNITED STATES PATENT OFFICE

FRED E. FINCH, OF READING, PENNSYLVANIA

COUNT CHECKING DEVICE FOR PACKAGED COINS

Application filed May 17, 1930. Serial No. 453,325.

This invention relates to a device for checking the count of coins in the roll packages universally used today in banking and business and is more particularly concerned with a device for checking the accuracy of the count by weight without unpackaging the coins or disturbing the wrapping; and with due compensation for loss in column height or length, and weight by wear, and with the method involved therein.

Determination of accuracy of count by weight is predicated on the known fact that standard roll packages of new coins have definite weight relation; that the maximum wear in the column of coins in all or practically all standard packages will be less than the weight of one coin; and not more than three coins in the case of dimes; and that the loss in column height or length through wear, due to the absorption of more of the thickness wear by the milled beaded edges of coins, as compared to loss in weight, is substantially as four to one; and that shrinkage in length of a roll column of coins through wear from new column thickness to maximum wear thickness can be precalculated for gauging, and accurately compensated for balance.

United States coins are roll packaged in quantities of fifty "dimes," forty "quarters" and twenty half dollars. The United States fixed relative weight standard of its coins, when new, permits proportioned leverage placement of rolls of different coins relative to a pivotal balance line or point of a coin supporting and weighing table or platform and the proportionate loss of weight to height or length in a standard roll or column of worn coins, permits a proportionate adjustment of a counter balancing weight at the opposite sides of the pivotal edge or point to compensate. Where the loss in column height or length compensated by corresponding proportionate adjustment of the counter balancing weight fails to balance and the roll of coins is overbalanced by the weight adjustment, a shortage of count or inclusion of a smaller and lighter coin will be indicated. When balance is not attained with the proportionate counterbalancing adjustment made and the coin roll overbalances the counterweight, an overcount or excess in number of coins will be indicated or the inclusion of a different coin of coincident or smaller size and greater weight. In such cases, the roll package will require opening, examination and count.

A roll or column length (or height) caliper or gauge bar is used for standard coin roll packages of each denomination calibrated to indicate proportionate divisions or fractions of the maximum permissible loss of length in height, with the calibrations extending from a point indicating the full count of new coins to the point indicating the maximum loss of length or height permissible in a full count of worn coins. If the caliper or gauge may be moved appreciably toward the pivotal point, a short count will be immediately indicated, and the device embodies this quick determining means for obvious shortage as one of its features.

The described features of the invention will be more clearly apparent from the following detailed description which is to be read in conjunction with the accompanying drawing forming part thereof and illustrating one form of the device.

In the drawing:—

Figure 1 is a perspective view of a count checking platform balance embodying the features of the present invention.

Figure 2 is a longitudinal vertical section thereof.

Figure 3 is a transverse vertical section on line 3—3 of Figure 2 with the caliper bar shown in cooperative gauging relation to a roll package of coins, in this instance representing "quarters".

Figure 4 is a detail perspective view of the quarters and half dollar caliper bar.

Figure 5 is a detail section of a modification, illustrating a visual indicator hereinafter described.

In the drawing a flat rectangular plate 1 which may be of any suitable material such as wood, cast aluminum etc., is provided midway of its length with a perpendicular traversing rib 2 or any equivalent pivoting means, said rib having its lower edge beveled to a knife edge 3, and providing a transverse

knife edge balance or balance line. 4 indicates a plane surface, such as a bank counter, desk or table top upon which the knife edge balance may rest.

At one side of the balancing edge, I provide the platform, plate scale or balance thus formed with troughs or receptacles for standard packages or rolls of different coins, these seats having abutments designed to engage one end of the coin roll package. Conveniently, such seats may be formed by V-shaped grooves such as the grooves 5 and 6 shown in Figs. 1 and 2, cut or cast in the top face of the plate 1 with the plate of one end of the groove forming abutments 7 for one end of the coin roll packages seating therein and, since it is desired, in accordance with my invention, to measure the length of the coin column within these packages I provide the end abutment walls 7 with inwardly facing pointed contact studs 8 of predetermined length which will penetrate the material of the coin package and engage the coin at one end of its coin column, thus making it unnecessary to disturb the wrapper of the package.

In order to provide a gauge for determining the loss of weight by wear for a full count of coins of each denomination proportioned to their loss of column length by wear, I have established by experimentation the length of the coin columns of full count packages of coins of different denominations and the maximum loss in length of full count coin columns of the same denominations through maximum permissible wear, and have determined by experiment and calculation that such coin columns lose weight in proportion to loss in column length in the ratio of approximately one to four.

The official standard weight of new United States coins makes the fifty dimes (new) contained in the standard fifty dime roll package equal in weight to twenty new quarters and ten new half dollars, and standard roll packages contain forty quarters and twenty half dollars, each, when new, weighing twice as much as the fifty new dimes. In view of this fact, I have selected the dime package as a basis of calculation and balance. The coin trough 5 is intended, in the illustrated form of my device, to seat the standard dime roll package. At the opposite side of the knife edge balance or other pivotal point of device there is provided an elongated recess 9 which, in the event of the plate 1 being made of thin metal, might well be substituted merely by a slot. The recess 9 extends longitudinally of the plate 1. The base of the recess is provided with a longitudinal rib 10 which is straddled by the bifurcated lower face 11 of an auxiliary counter weight 12. This fits the sides of the recess rather closely and has an upstanding thumb hold 13 by which it is moved back and forth.

The weight 12 supplements a permanent counter weight 12^a which is made integrally with the plate 1 in any suitable manner. This main or permanent counter weight is but little less in weight than a column of fifty new dimes, which column is herein taken as a standard. The actual counter balancing action is accomplished by the auxiliary counter weight 12, and by virtue of the near balance which is arrived at by the main counter weight 12^a it becomes possible to space the calibrations 19 (Fig. 1) rather far apart so that considerable leeway is allowed in making the adjustments of the auxiliary counter weight in determining a coin count.

In other words, were it not for the main counter weight 12^a and the stated function which it performs, all of the balancing action would rest with the auxiliary counter weight 12 with the consequent disadvantage of having the readings along the scale 19 so narrowly spaced as to make it difficult to place the auxiliary counter weight at its settings. In practice the recess 9, or slot if that be used, will be appreciably longer than indicated. The distance between the graduations 19 will also be appreciably greater. The result is that the counter weight may be moved back and forth in proximity to the various graduations with utmost freedom without the operator having to constantly be on guard for the "breaking point" of the scale. This feature works out in practice to the extent that as much as a ½'' variation will be allowed on either side of a given graduation, thus taking into account any possible variation in coin thicknesses and column weights, or in other words combinations of old and new coins in a different package. The quarter and half dollar trough 6, designed to hold standard packages of forty quarters and twenty half dollars, whose weight when new, is each twice that of the fifty new dimes, is like the dime trough in parallel to the knife edge blade 2 and is centered on a line exactly half way between the center line of the dime trough 7 and the line of the knife edge 3 so that the leverage against the weight 12 being reduced to half, the counter weight 12 in its normal position alined with calibration "4" will also balance the forty new quarters and twenty new half dollars of such standard packages. Obviously troughs for other coins may be provided, centered on that line parallel to the knife blade 2 and troughs 5 and 6 predetermined by the proportionate weight of its full count of new coins to that of the full count of new dimes, the length of the plate 1 and position of the counter weight, of course being predicated on the number of troughs used, and on the weight of plate 1 at the coin trough side of the balancing knife edge.

The calibrations 19 edging the slot 9 may be sub-divided as suggested in Fig. 1 and the top face of the counter weight 12 may have a registering line such as shown, or a pointer.

The counter edge face of the scale plate 1 in line with the coin package troughs which as shown, terminate inwardly of said edge, is bored horizontally through on the longitudinal axes of the troughs to receive and guide caliper or gauge rods or bars 14, preferably rectangular in cross section to provide a plurality of faces for calibrating and having their inner ends provided with axially and inwardly extending pointed prongs 14^a of determinate length to penetrate the material of the coin package and contact the outer end coin of the coin column therein, the inner end coin being similarly contacted by the pointed ends of studs 8 at the opposite ends of the troughs. As a variation of this arrangement the calipering may be accomplished by merely graduating one or both edges of the coin troughs or receptacles a distance back from one end agreeing with columns of new and variably worn coin columns.

The lengths of the coin columns in respect to the extremes of full count new coins and full count worn coins of maximum permissible wear, are indicated by calibrations 15 determinately located on a face of the gauge bars 14 and indicating with reference to the outer edge face of the plate 1, the length of the coin column of a package with respect to proportionate degrees of loss of column length through wear up to the maximum permissible loss by wear of a full count of the particular denomination of coin.

Where, as in trough 6, packages of coins of different denominations, quarters and half dollars, are to be seated, the gauge bar 14 for that trough will have two of its faces differently calibrated, one for each coin denomination as shown in Figure 4. In case the edge graduations are employed in lieu of the bar 14, the marks would be of variable length so that quarter and half dollar denominations are readily distinguishable. It is to be clearly understood that the indication of the gauge bar calibrations, or edge graduations, are to be read in direct combination with the auxiliary counter weight 12 in determining a coin count. The gauge bar is to be regarded as a preliminary or initial checking means on the coins solely for the purpose of establishing the fact that a given column contains new worn or mixed coins. The later adjustment of the auxiliary slidable counter weight 12 will indicate the count of coins in the package when a balance is arrived at. The gauge calibrations 15 are scaled in two or more divisions representing the relation of loss of column length to loss by weight and the calibrations edging the counter weight recess 9 are similarly scaled with the weight leverage position of the counter weight 12 in the scaled position precalculated to offset and counter balance a loss in weight by wear.

The coins of a package, if a full count, should, therefore, balance with the counter weight adjusted to the calibration proportioning the loss of weight to loss of column length and preferably indicated by a corresponding scale numeral. If, on the other hand, the coin column length loss indicated by a calibration 15 is within the maximum permissible length loss, but, the coins in the package are of mixed denomination and weights, the counter weight when adjusted to the calibration indicated by the gauge calibration for full count, will not balance the scale platform but will over or under balance. Thus a determinate accurate check of full coin count is afforded and recount of all coin roll packages is avoided, only those being recounted which gauge calibration or scale weighing indicate "short" or "long". Under balance by the counter weight when properly adjusted will indicate the presence of a heavier coin of substantially similar size and different denomination as for example a foreign coin, or a gold coin, and over balance, similarly a lighter coin.

To facilitate the operation of weighing and prevent excessive tilting on the knife edge balance, or other pivotal point, abutment studs 16 depend from the under face of the plate 1 at joints equidistant from the balancing knife edge. The double "click" or "tap" of these studs on the counter or table will furnish a quick audible signal of balance.

As a variation of the foregoing audible signal of the accomplishment of the balancing arrangement in Figure 5 may be adopted. This is a visual signal. The stud 16 (at the left) is here shown in combination with a thin scale plate 1. It is equipped with jam nuts 17, 18 which are so spaced that when the point of the stud touches the counter or table and is thereby stopped, the remaining movement of the plate 1 to the final and dotted line position will in effect make a departure of the stud 17 from the top face of the plate thus indicating to the observer that the balance has been reached. This arrangement and operation is predicated on a loose mounting of the stud 16. In practice it will be desirable to make the stud as light as possible so that there will be no chance of a false reading.

The device is relatively simple in structure and may be accurately made. Initial balance adjustment having been made, and gauging calibrations checked, there is nothing in ordinary use to breed inaccuracy. The package penetrating coin contacting tips 8 and 14^a may be of or coated with wear resisting material so that their accuracy of measurement will

be maintained. Means of any desired character may be used to fix and detachably maintain the counter balancing weight 12 in an adjusted position so that it will not move as the scale plate oscillates. The particular form of the device disclosed illustrates the operative principle of the invention but is intended merely as illustrative thereof and not restrictive, and may be modified in consonance with the spirit of the invention and the scope of the appended claims.

I claim:

1. A device for checking the full count of standard packages of coins by weight comprising a plate balance scale having a coin package seat thereon having a coin column end abutment, gauge means associated with said seat to initially measure the length of said column, said gauge means having associated calibrations in terms of degrees of permissible loss of column length through wear in a full count of coins of the said selected denomination up to the maximum permissible length wear for full count, and a weight on said plate opposed to said package seat normally positioned therein to counter balance the weight of a full count package of new coins of the selected denomination on said seat, and arranged for adjustment from said normal position to calibration-indicated positions coordinating and counterbalancing proportionate weight loss to the coin column length loss by wear indicated by a gauge calibration.

2. A device for checking the full count of standard packages of coins by weight comprising a plate scale having an intermediate balance point with a coin package seat on said plate at one side of said balance point, a caliper bar mounted on said plate for movement longitudinally of the coin column of a package engaging said seat at one end to engage the other end of said coin column and measure its length, said caliper bar having associated calibrations in terms of degrees of permissible loss in column length through wear in a full count of coins of the denomination being measured up to the maximum limit of wear for full count, and a counter balance on said plate at the side of said edge opposite to the coin package, normally positioned to balance the weight of a full count package of new coins of corresponding denomination and mounted for movement relatively to said balance point from position of full count new coin balance to calibration indicated positions providing counter balancing weight corresponding to the proportionate weight loss indicated by the degree of coin column length loss indicated by said caliper bar calibration reading.

3. A device for checking the full count of standard roll packages of coins by weight comprising a platform balance having a pivotal support, and a coin trough therein at one side of said pivotal support, having an abutment engaging one end of the coin package, a caliper bar mounted on said platform to slide longitudinally of the trough from one end thereof to contact the other end of the coin package and measure the length of the column of coins in said package, said caliper bar having associated calibrations in terms of degrees of permissible loss in column length by wear for a full count of the coins of the denomination being measured and cooperating with said platform to indicate the loss defining calibration, and a counter weight on said platform at the side of said pivotal support opposite to the coin package trough having a normal position relatively to said pivotal support to balance the weight of a full count package of new coins of that denomination in said trough and mounted for counter balance adjustment relatively to said pivotal support and to platform calibrations coordinating loss in weight by wear to the loss in column length by wear indicated by said caliper bar calibrations.

4. A device for checking the full count of standard coin roll packages by weight comprising a plate having an intermediate balance point and a coin roll seat thereon at one side of said balance point provided with a roll end abutment penetrating the roll and engaging the coin at one end thereof, a gauging bar mounted on said plate for sliding movement longitudinally of the coin column and having its inner end formed to penetrate the other end of the coin roll to contact the end coin therein and measure the length of the coin column, said gauge bar having associated calibrations extending from the length point of a full count column of new coins of the denominations being measured, to the length point of maximum permissible wear in said full count column and cooperating with said plate to indicate the degree of loss of length in the coin column by wear, and a weight mounted on said plate at the side of said balance point opposite to the coin roll normally positioned relatively to said balance point to balance the weight of a full count package of new coins of the denomination being measured, said weight being mounted for adjustment from said normal point toward said balance point and relatively to plate calibrations proportioning the coin weight loss compensating adjustment of said weight to the coin column length loss indicated by the gauge bar calibrations.

5. A device for checking the full count of standard roll packages of coins comprising a plate having a transverse intermediate balance line, a dime roll trough in said plate at one side of and in parallel to said balance line and determinately spaced therefrom and having an abutment engaging one end of a dime roll therein, a counter weight on said plate at the opposite side of said balance line

normally positioned thereon relatively to said line to balance the weight of a full count roll of new dimes in said dime roll trough, a combined quarter and half dollar roll trough in said plate extending in parallel to said balance line and located midway between said line and dime roll trough to halve the doubled weight of standard new quarter and half dollar rolls and balance with said counter weight, said trough having an abutment to engage one end of a coin roll therein, caliper bars mounted in said plate for sliding movement longitudinally of the troughs to engage the ends of the coin rolls opposite to the trough abutments and measure the lengths of the coin columns of said rolls, said bars having associated calibrations in degrees of loss in coin column lengths from the maximum of full count new coin length to the minimum of full count worn coin length, said counter weight being mounted for adjusting movement relatively to said balance line, said plate having calibrations thereon cooperating with said counter weight and coordinated to the loss of coin column lengths indicated by bar calibrations to counter balance by calibrated adjustment of said weight the coin column weight loss proportionate to the loss in coin column length by wear.

6. A device for checking the full count of standard coin roll packages comprising a table scale having an intermediate transverse balancing line, a plurality of coin package seats thereon at one side of said balance line for standard coin packages of different denominations, a counter weight on said table at the opposite side of said balance line positioned thereon to counter balance the weight of a full count package of new coins on one of said seats with the remaining coin seats positioned in that leverage ratio to the balance line to equal the weight of their full count coin packages, through proportionate leverages, to that of the first balanced coin package of a different denomination of coin.

7. A device for checking the full count of standard coin roll packages comprising a table scale having an intermediate transverse balancing line, a plurality of coin package seats thereon at one side of said balance line for standard coin packages of different denominations, a counter weight on said table at the opposite side of said balance line positioned thereon to counter balance the weight of a full count package of new coins on one of said seats with the remaining coin seats positioned in that leverage ratio to the balance line to equal the weight of their full count coin packages, through proportionate leverages, to that of the first balanced coin package of a different denomination of coin, means for gauging the coin column lengths of coin packages on said seats and for calibrating in degrees the limits of permissible loss of column length of a full count package through wear from its full count new coin length and means for adjusting said counter weight relatively to said balance line to determine by proportion counter balancing leverage to loss of weight in a full count column of coins through wear to the extent calibrated by said gauging means.

8. In a device for checking the full count of standard packages of coins, a base providing a coin package seat and an abutment to engage one end of the column of coins in a package, and a gauge mounted on said base for movement to contact the opposite end of said coin column to measure its length, said gauge having associated calibrations to indicate the limit of reduced column length by maximum permissible wear of a full count of coins of a specific denomination from the full column length of a full count of new coins of that denomination.

9. In a device for checking the full count of standard packages of coins, a base having a coin seat thereon provided with an abutment to engage one end of a coin package and formed to penetrate the material of said package and engage the coin at one end of the coin column therein, and a gauging bar mounted on said base for movement to contact one end thereof with the opposite end of the coin package to measure the length of its coin column, said gauging bar end being formed to penetrate the material of the package to engage the coin at that end thereof, said bar having associated calibrations to indicate the limit of reduced column length by maximum permissible wear of a full count of the determination of coin being measured from the full column length of the coin column of a full count package of new coins of that denomination.

10. A device of the character described comprising a pivoted plate, means at one end of the plate for receiving a column of coins, a main counter balance at the other end of the plate being slightly less in weight than a given column of new coins of a determined denomination, an auxiliary weight movably mounted on said other end of the plate for producing an over-balancing motion of the plate in the direction of the coin column, and means movably associated with said one end of the plate, being subject to movement at the approximate completion of the overbalancing act thus to provide a visual indication of said act.

11. A device for checking the full count of coin packages comprising a plate having transverse balancing means, a dime package trough in said plate at one side of the balancing means and determinately spaced therefrom, a counterweight on said plate at the opposite side of said balancing means normally positioned thereon relatively to said balancing means to balance the weight

of a full-count package of new dimes in said trough, a quarter and half dollar trough in said plate located midway between said balancing means and the dime package trough, said counterweight being mounted for adjusting movement relatively to said balancing means, said plate having calibrations cooperating with said counterweight.

FRED E. FINCH.

June 6, 1944. W. H. PARNELL 2,350,414

COIN TESTER

Filed June 9, 1941 2 Sheets-Sheet 1

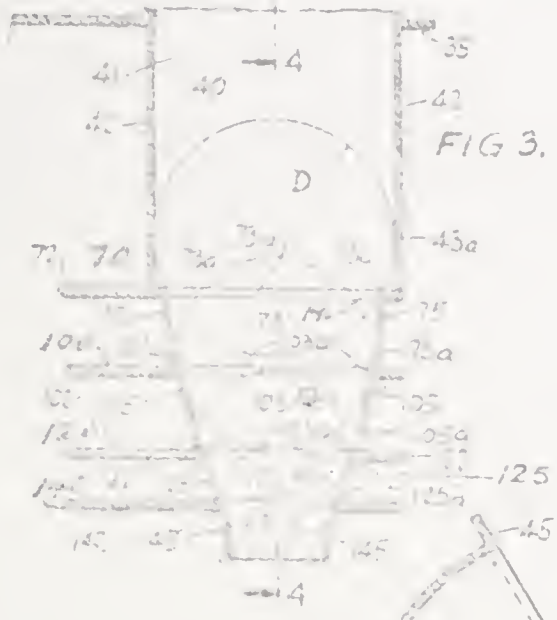


FIG. 3.

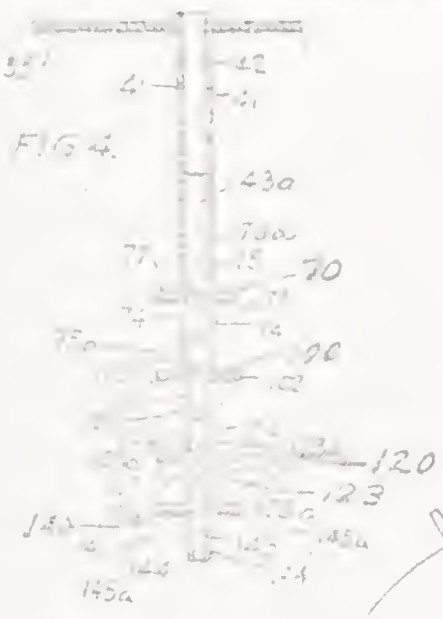


FIG. 4.

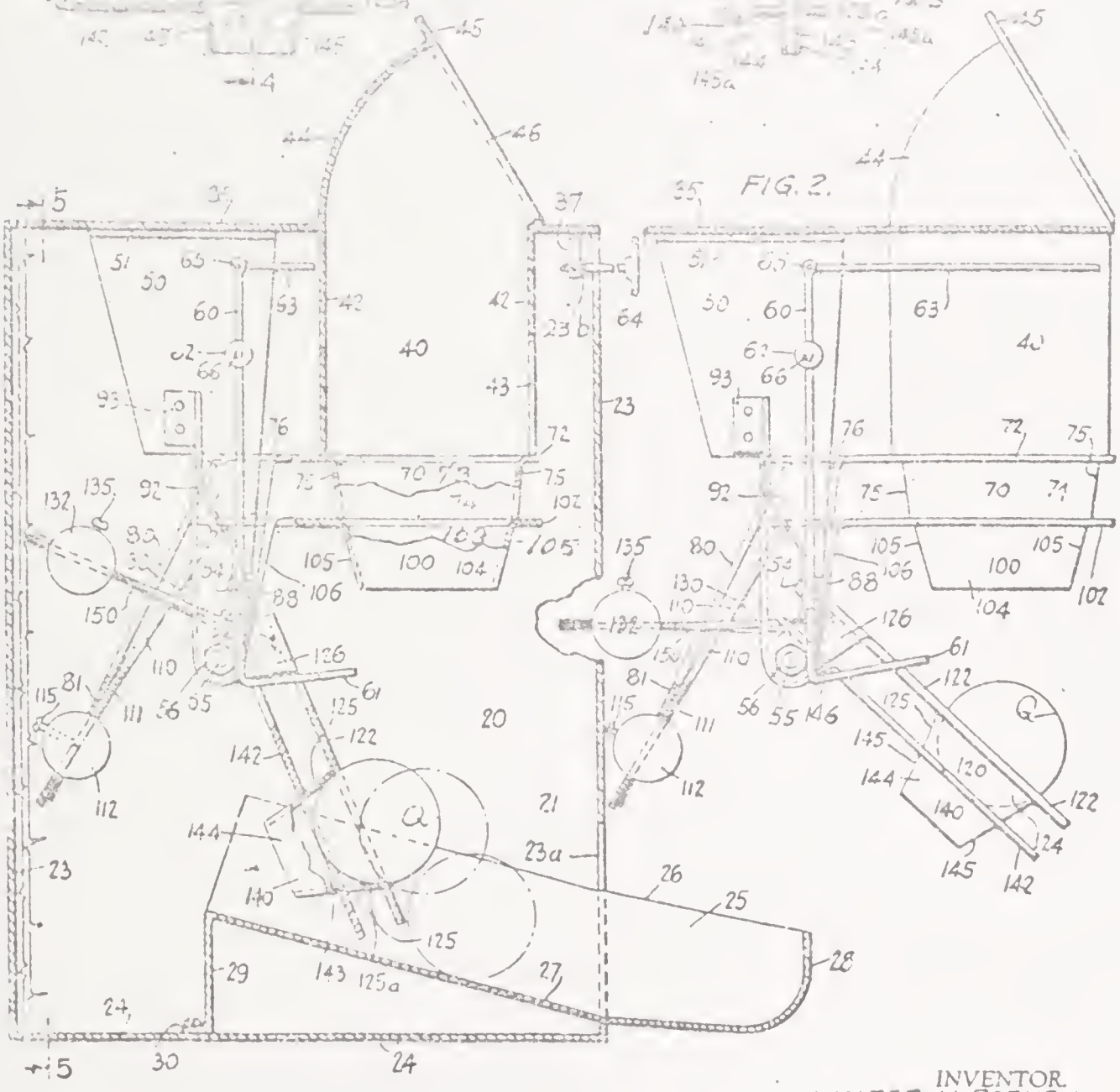


FIG. 1.

FIG. 2.

INVENTOR.
WALTER H. PARNELL.

BY A A de Bonneville

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June 6, 1944. W. H. PARNELL 2,350,414

[illegible] Filed June 6, 1941 2 Sheets-Sheet 2

FIG. 5.

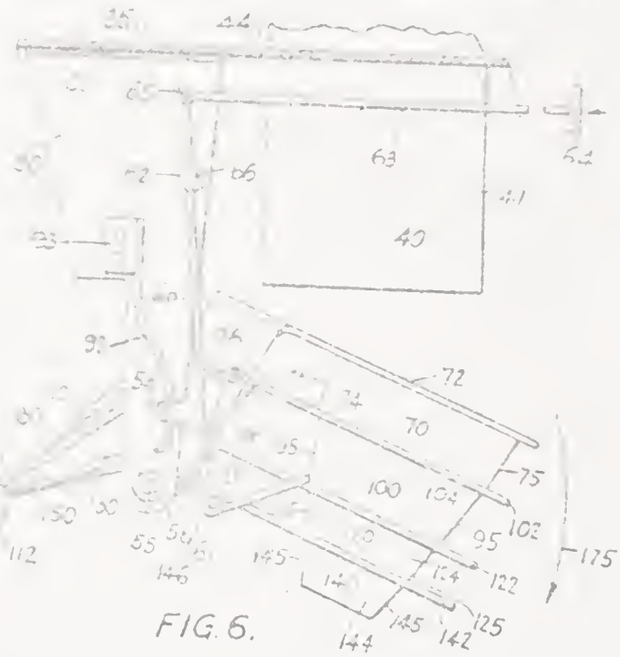

FIG. 6.

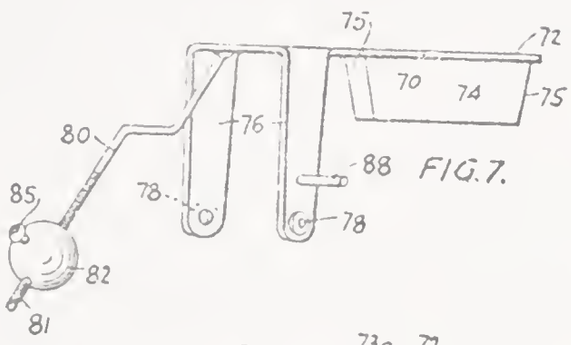

FIG. 7.

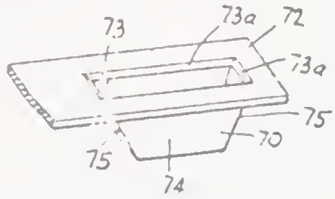

FIG. 8.

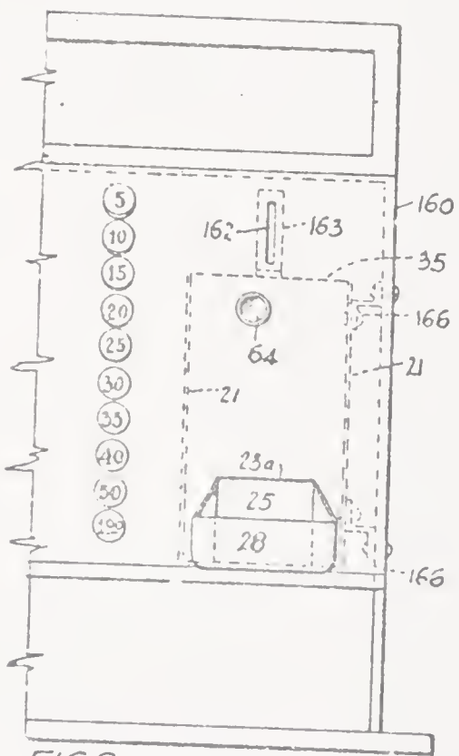

FIG. 9.

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UNITED STATES PATENT OFFICE

2,350,414

COIN TESTER

Walter H. Parnell, Brooklyn, N. Y., assignor of one-fourth to Jay Lansburg, one-fourth to Wallace A. Warren, one-fourth to Nathan Rothenberg, all of Brooklyn, N. Y.

Application June 5, 1941, Serial No. 396,689

7 Claims. (Cl. 268—50)

This invention relates to a coin tester.

The object of the invention is the production of a tester by means of which coins which are under weight are easily detected.

The second object of the invention is the production of a tester by means of which coins of different denominations may be tested to find out whether they are underweight.

The third object of the invention is the production of a coin tester, which can be used independently of other apparatus, and which can be connected to coin testers in other apparatus, such as a cash register.

The fourth object of the invention is the production of a coin tester, which has connected thereto means to easily eject coins therefrom, which are underweight.

The fifth object of the invention is the production of a coin tester, which provides means to quickly detect coins which are underweight.

The sixth object of the invention is the production of a coin tester, which has one inlet conduit for the testing of coins of different denominations.

The seventh object of the invention is the production of a coin tester, which can be readily inspected and adjusted.

The eighth object of the invention is the production of a coin tester, which saves time in providing a quick means to classify coins as to their weight.

The ninth object of the invention is the production of a coin tester with only one inlet opening for a plurality of coins to be tested.

The organization of the invention comprises one or a plurality of levers, into which coins may be dropped to swing them sufficiently when the coins are the required weight to enable the coins to roll therefrom, and which do not roll therefrom when not of sufficient weight.

It is well known that some counterfeit coins weigh less than genuine coins, and the operation of the detector is based upon this fact.

Various other objects of the invention will be apparent from the claims, specification and drawings.

Fig. 1 represents a side elevation of the coin detector and partial section as on the line 1—1 of Fig. 5; Fig. 2 is a view similar to Fig. 1 with some of the movable parts in a different position, and other portions in full lines; Fig. 3 is a partial section of Fig. 5 on the line 1—1; Fig. 4 shows a section of Fig. 3 on the line 4—4 of Fig. 3; Fig. 5 is a partial section of Fig. 1 on the line 5—5 and a left hand view of said Fig. 1; Fig. 6 is a view similar to Fig. 2 with the movable elements in a different position; Fig. 7 represents a modification of some details; Fig. 8 includes a plan on Fig. 7 in perspective; and Fig. 9 includes a diagrammatic portion of a coin register with the coin detector thereon.

A housing 20 for the coin detector comprises the side walls 21, the flanges 22 at their ends, the bottom 23 and the bottom wall 24. One of the walls 23 has a lateral exit opening 23a at its lower end into the slot 25b at its end.

A discharge chute 25 comprises the side walls 26, the bottom section wall 27, the cup shaped end wall 28 and the supporting wall 29 having the flange 30 which latter is fastened to the wall 24.

A cover 35 is supported on the flanges 22 and is fastened in place by the screws 36. From the cover 35 extends the supporting bracket 37.

The cover 35 has integral therewith the main inlet conduit 40 rectangular in cross-section and is shown with the side walls 41 and the end walls 42. In one of the walls 42 is shown the clearance opening 43a. The conduit 40 extends above the cover 35, with the curved upper portion 44 for one of the ends walls 42. An inclined flange 45 is shown at the upper end of the conduit 40, with the inlet opening 46.

A pair of brackets 50 are each shown with a foot 51 at the upper end and the latter are fastened to the cover 35.

A brace 52 with the flanges 53 connects the brackets 50. A clearance opening 54 is shown in one of the brackets 50.

A shaft 55 having threaded ends is tightly supported in the lower ends of the brackets 50, and nuts 56 securely clamp the shaft 55 in place.

A release lever 60 is shown with a hook end 61 at its lower end, and the hub 62 adjacent to its upper end. An operating rod 63 is shown with the disc handle 64 at one end and is pivoted at its other end to the release lever 60 by means of the pin 65. The rod 63 at one end is slidably supported by the bracket 37.

A pin 66 extends from one of the main brackets 50 and leads through the hub 62 to support the release lever 60.

An upper conduit lever is designated in its entirety by the numeral 70. The lever 70 comprises the upper plate 72, which has integral therewith the conduit 73 with the tapered portions 73a at its upper end, see Fig. 8. The conduit 73 is indicated with the side walls 74 and the slightly tapering end walls 75. One of the walls 75 has the clearance opening 75a. The

...position, see Figs. ... 76 extend at right angles ... 72. Studs 78 extend from the ... faces of the lower ends of the arms 76. The arms 76 are supported on the shaft 55. The ... 72 has extending therefrom the counterweight ... 82 which is threaded at its lower ... counterweight 82 to be ... thereto. A set screw 85 ... counterweight 82 in operative position.

A pin 86 extends from one of the arms 76 and ... against the projecting portion 84 of ... of the brackets 82.

A spring 92 with ... from 93 into the outer ... to the direction of ... the arrow 94.

The operating rod 64 extends through the ... 23b.

A second conduit lever ... designated in its ... by the numeral 100 and is similar to the ... lever 70.

The lever 100 comprises the upper plate 102, which has integral therewith the conduit 103 ... the side walls 104 and the slightly tapered ... walls 105. One of the end walls 105 has ... clearance opening 105a similar to 73a. The ... 103 functions with the conduit 73, when the lever 100 is in its upper position, see Figs. 3 and 4. The conduit 103 extends through the upper plate 102, with the tapered portions 103a similar to 73a.

A pair of arms 106, similar to 76, extend at right angles from the plate 102. Hubs 108 similar to 78 extend from the outer faces of the arms 106. The arms 106 are supported on the shaft 55.

The plate 102 has extending therefrom the counterweight rod 110, which is threaded as shown at 111, for the counterweight 112 to be adjustably connected thereto. A set screw 115 clamps the counterweight 112 in operative position.

The conduit 103 functions with the conduit 73, when the lever 100 is at its normal top position.

A third conduit lever similar to those described is designated in its entirety by the numeral 120. The lever 120 comprises the upper plate 122, which has integral therewith the conduit 123 having the side walls 124 and the slightly tapered end walls 125.

One of the walls 125 has a clearance opening 125a similar to 105a. The conduit 123 functions with the conduit 103, when the lever 120 is in its upper position. The conduit 123 extends through the plate 122, and its upper ends are tapered as indicated at 123a similar to 73a. A pair of arms 126 similar to 106 extend at right angles from the plate 122. Hubs 128 similar to 78 extend from the outer faces of the arms 126. The arms 126 are supported on the shaft 55.

The plate 122 has extending therefrom the counterweight rod 130, which is threaded for the counterweight 132, to be adjustably connected thereto. A set screw 135 clamps the counterweight 132 in operative position.

A fourth and the lowest conduit lever, similar to those described is designated in its entirety by the numeral 140.

The lever 140 comprises the upper plate 142, which has integral therewith the conduit 143, having the side walls 144 and the slightly tapering end walls 145. The walls 144 and 145 are ... to 73a, see Fig. 8.

The conduit 143 functions with the conduit 123 when the lever 140 is in its upper position, see Figs. 3 and 4.

A pair of arms 146 similar to 126 extend at ... angles from the plate 142. Hubs 148 similar to 78 extend from the outer faces of the arms 146. The arms 146 are supported on the shaft 55.

The plate 142 has extending therefrom the counterweight rod 150 which is threaded for the counterweight 152 to be adjustably connected thereto. A set screw 155 clamps the counterweight 152 in operative position.

Referring to Fig. 9 it will be noted that the side walls 104 are somewhat wider together than the walls 74 and that the walls 124 are somewhat closer together than the walls 104, and the walls 144 are somewhat closer together than the walls 124.

Referring to Fig. 9 the coin detector is positioned and secured in place in a coin register designated in its entirety by the numeral 160. An inlet opening 162 is shown for the conduit 163 which extends to the mouth 45 of the inlet conduit 40 of the coin detector. The side walls of the housing of the coin detector are again indicated at 21. Brackets 166 hold the housing of the coin detector in place in the cash register. The discharge chute of the coin detector is again indicated at 25 and the disc handle is again shown at 64.

Referring to Fig. 3, a silver dollar coin is indicated at D, which extends from the main conduit 40 into the conduit 73, and the circumferential edge of the coin D bears on the tapered portions 73a of the end walls 75.

A half dollar silver coin is shown at H, which extends from the conduit 73 into the conduit 103, and the circumferential edge of the coin H bears on the tapered portions 103a of the end walls 105.

A twenty-five cent silver coin is shown at Q, which extends from the conduit 103 into the conduit 123 and the circumferential edge of the coin Q bears on the tapered portions 123a of the end walls 125.

A ten cent silver coin is shown at T, which extends from the conduit 123 into the conduit 143, and the circumferential edge of the coin T bears on the tapered portions 145a of the end walls 145.

It will be noted that all the operative mechanism of the coin detector extends from the cover 35 into the housing 20.

To use the coin detector the conduit levers 70, 100, 120 and 140 are located in their upper positions, by virtue of the counterweights 82, 112, 132 and 152, see Fig. 5.

We may suppose a genuine silver dollar coin D is passed through the inlet opening 46, Fig. 1 to enter the main inlet conduit 40. The said dollar D drops into the upper end of the conduit 73, Fig. 3 of the conduit lever 70. The weight of the coin swings down all the conduit levers in the direction of the arrow 175, Fig. 6. The coin D then passes through the clearance opening 43a of the main conduit 40, Fig. 3, and drops into the discharge chute 25, from which it can be easily removed. If the coin is underweight, all the conduit levers as previously stated will not swing sufficiently to permit the dollar coin D to roll from the conduit lever 70 into the discharge chute 25.

On the discharge of the genuine silver dollar D, the conduit levers, are all swung up to their original positions by their counterweights.

If the coin is underweight, the operator in order to remove the coin from the detector bears on the disc handle 64, and the release lever 60 bears against the pin 88, and thereby all the conduit levers swing down as shown in Fig. 6, and the coin rolls from the conduit 73 of the lever 70 into the discharge chute 75. When the operator releases the disc handle 64, the counterweights swing all the conduit levers to their original positions as indicated in Figs. 3 and 4. When the conduit lever 120 is swung up by the coin 88 comes against the release lever 60 which in turn bears against the spring 32 which latter functions as a check absorber.

If a silver half dollar coin H passed through the inlet opening 46 to enter the main conduit 40, the half dollar coin H drops into the conduit 163 of the second conduit lever 160 against the tension of the spring 175. The coin H passes through the conduit 163 of the lever 160 into the discharge chute 25 from which latter it can be readily removed. If the half dollar coin H is underweight, the conduit levers 160, 120 and 140 will not swing enough to permit the coin to roll from the conduit 163 of the lever 160. In such a case to remove the coin from the detector the operator bears on the disc handle 64 and the release lever 60 bears against the pin 88, and thereby the conduit levers swing down as shown in Fig. 6, and the coin rolls from the conduit 163 of the lever 160 into the discharge chute 25. When the operator releases the disc handle 64, the counterweights swing all the conduit levers to their original positions as indicated in Figs. 3 and 4.

If a twenty-five cent silver coin Q is passed through the inlet opening 46 to enter the main conduit 40, the twenty-five cent coin drops into the conduit 123 of the conduit lever 120, and if a good coin swings down the conduit lever 120 and also the fourth conduit lever 140, in the direction of the arrow 175. The coin if of the required weight passes through the clearance opening 165a of the conduit 163 of the lever 160, to drop from the conduit 123 of the lever 120 into the discharge chute 25, see Fig. 1.

If the twenty-five cent coin is underweight, see Fig. 2, the conduit levers 120 and 140 will not swing enough to permit the twenty-five cent coin to roll from the conduit 123 of the lever 120. In such a case to remove the coin from the detector, the operator bears on the disc handle 64, as described for the uppermost and second conduit levers and the coin then rolls from the conduit lever 120 into the discharge chute 25.

If a ten cent silver coin T, is passed through the inlet opening 46 to enter the main conduit 40, the ten cent coin T drops into the conduit 143 of the fourth conduit lever 140, and swings down the lever 140, in the direction of the arrow 175, and if the coin is of sufficient weight the coin rolls from the conduit 143 into the chute 25.

If the ten cent coin is underweight the conduit lever 140 will not swing enough to permit the ten cent coin T to roll therefrom. In such case the operator bears on the disc handle 64 to remove the coin as described for the other conduit levers.

It will be noted that when the conduit levers swing down, see Fig. 6, the pin 88 will contact with the hook end 61 of the release lever 60 and prevent the conduit levers 70 swinging too far. The contact of the pin 88 with the hook end 61

causes the positive discharge of any of the coins from the conduit levers.

Various modifications may be made in the invention and the present exemplification is to be taken as illustrative and not limitative thereof.

I claim:

1. In a coin tester the combination of a housing, a detachable cover at the upper end of the housing, a main inlet conduit for coins to be tested extending from the outside of the cover to the inside of the housing, said main inlet conduit having side walls and end walls, a pair of brackets spaced from each other extending from said cover, a shaft with its ends supported in the lower ends of said brackets, a pair of counterbalanced conduit levers, normally in vertical alignment with each other and said main inlet conduit, said levers hinged to the shaft, the conduits of the levers decreasing in size from the top one to the bottom one, the conduits of each of the conduit levers comprising side walls and a pair of end walls, one end wall of the main inlet conduit and one end wall of the upper lever conduit each having a clearance opening at its lower portion whereby the upper part of a coin of proper weight supported by a lever may upon tilting of the lever pass through the clearance opening immediately above, said main conduit adapted to permit coins of different denominations to pass therethrough, each conduit lever having extending therefrom a pair of arms, a hub at the lower end of each arm, whereby each pair of arms is hinged to the shaft at the lower ends of the brackets.

2. In a coin tester the combination of a housing, a detachable cover at the upper end of the housing, a main inlet conduit for coins to be tested extending from the outside of the cover to the inside of the housing, said main inlet conduit having side walls and end walls, a pair of brackets spaced from each other extending from said cover, a shaft with its ends supported in the lower ends of said brackets, a pair of counterbalanced conduit levers, normally in vertical alignment with each other and said main inlet conduit, said levers hinged to the shaft, the conduits of the levers decreasing in size from the top one to the bottom one, the conduits of each of the conduit levers comprising side walls and a pair of end walls, one end wall of the main inlet conduit and one end wall of the upper lever conduit each having a clearance opening at its lower portion whereby the upper part of a coin of proper weight supported by a lever may upon tilting of the lever pass through the clearance opening immediately above, said main conduit adapted to permit coins of different denominations to pass therethrough, each conduit lever having extending therefrom a pair of arms, a hub at the lower end of each arm, whereby each pair of arms is hinged to the shaft at the lower ends of the brackets, a release lever pivoted to one of said brackets, a hook end at the lower end of said release lever, a pin extending from the top conduit lever adapted to be engaged by the release lever and a discharge chute for the coins at the lower end of the housing extending from the inside to the outside thereof.

3. In a coin tester the combination of a main inlet conduit having side walls and end walls, a plurality of hinged counterbalanced levers normally positioned in line one over the other below said main inlet conduit, each lever having a conduit; the conduits of the levers progressively decreasing in size from the top to the bottom, the conduits of each of the levers comprising side walls and a pair of tapered end walls, one of the end walls of the main inlet conduit, and of each

of the lever conduits except the lowermost lever, a clearance opening at its lower portion, and main conduit adapted to permit coins of different denominations to pass therethrough, the coins of the uppermost lever adapted to temporarily hold the largest coin to be tested and the conduits of the levers below the top one adapted to temporarily hold coins of respectively decreased size, lever means adapted to swing down when a coin of proper weight is temporarily supported thereon to discharge said coin through the clearance opening into said slot and return means to discharge coins which are undersized.

WALTER H. PARNELL.

G. B. SMITH.

Coin Tester.

No. 9,997. Patented Sept. 6, 1853.

Fig. 1.

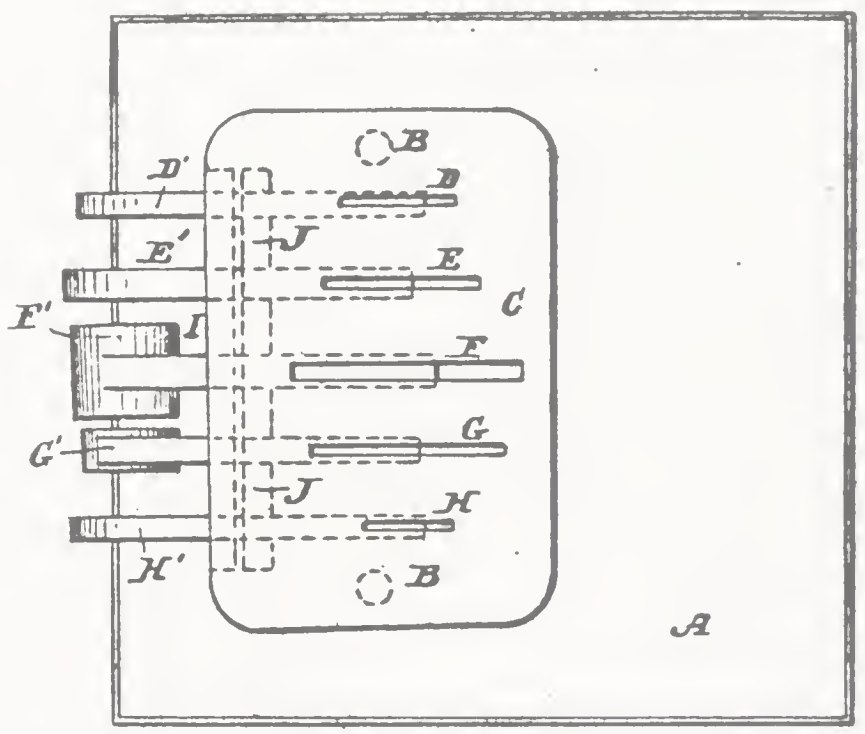
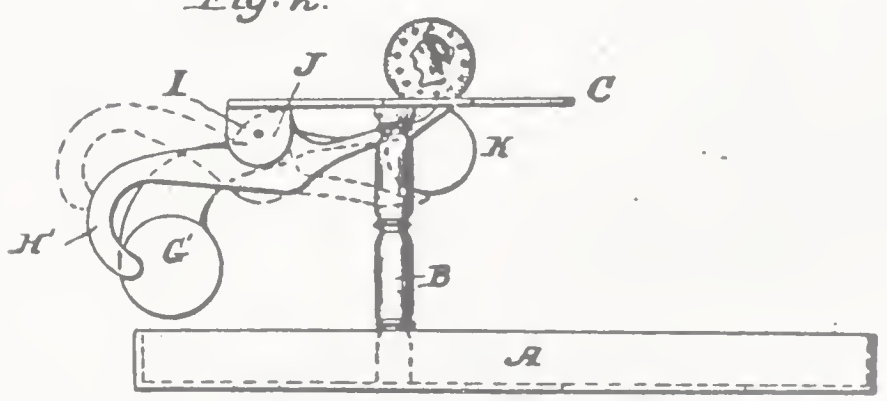


Fig. 2.



UNITED STATES PATENT OFFICE.

GIDEON B. SMITH, OF BALTIMORE, MARYLAND.

COUNTERFEIT-COIN DETECTOR.

Specification of Letters Patent No. 9,997, dated September 6, 1853.

To all whom it may concern:

Be it known that I. GIDEON B. SMITH, of the city of Baltimore. in the State of Maryland. have invented a new and useful Apparatus for Proving Genuine Gold Coin and Detecting Spurious Coin and for Such other Purposes as It may be Adapted: and I do hereby declare that the same is described and represented in the following specification and drawings.

The nature of my invention consists in a gage or hole just large enough to permit the genuine coin to pass through arranged in combination with a lever acting below said gage. balanced so that the weight of such coin will depress it so as to let said coin slip down through said gage which is too small to allow any spurious coin to pass which is larger than the genuine; the lever being so balanced that any coin lighter than the genuine will not be heavy enough to depress it so that all spurious coin whether too large or too light will stop in the gage, while the genuine will slip through and fall out below.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation referring to the drawings above mentioned in which the same letters indicate like parts in each of the figures.

Figure 1. is a plan, and Fig. 2, an elevation.

A is the base in which the two posts B B are fastened which support the gage plate C fastened to the top of said posts and provided with five slots adapted to five American gold coins as follows: D to two and a half dolls.. E to five dolls.. F to twenty dolls.. G to ten dollars. and H to one dollar pieces. These slots are just large enough to permit the genuine coins of the respective demoninations slip through freely onto the levers D′. E′, F′. G′ and H′ arranged to vibrate under each of the slots or gages respectively, as they are depressed by the coins put into the gages: and the rear ends of each of these levers which project out behind the gage plate C are made so heavy that anything lighter than the genuine coin which may be put into the gages will not be heavy enough to depress the ends under the gages; consequently all spurious coins which are larger than the genuine will be detected by the gages, and all such coins as are lighter than the genuine will be detected by the levers, if they are small enough to slip through the gages; while the genuine coin will slip freely through the gages and depress the levers so as to fall off and allow the levers to return to t' ir places. These levers all vibrate on the rod I which passes through them and through a series of projections J J, &c., on the under side of the gage plate provided for that purpose. The red I. projections J J, ends of levers which are under the gage plate and the position of the posts B B are all represented by dotted lines in Fig. 1.

In Fig. 2. a one dollar gold coin is represented as being put into the slot H through which it passes to the position represented by the circle K depressing the lever H′ to the position represented by the dotted lines, when the gage no longer supports the coin and it falls off of the lever. so that it resumes its place against the gage plate. ready to receive another coin.

I contemplate that a gage plate with one or more levers may be fixed in the top of a counter over a drawer or other receptacle for money; also that an inclined plane may be arranged below the levers on which the money may slide after it falls off of the levers to its desired destination. also that one or more gages with a lever or levers may be arranged in porte-monnaie or articles for carrying money in the pocket.

What I claim as my invention and desire to secure by Letters Patent is—

A gage or hole just large enough to permit the genuine coin to pass through; arranged in combination with a lever acting below said gage, balanced so that the weight of such coin will depress it so as to let said coin slip down through said gage which is too small to allow any spurious coin to pass which is larger than the genuine; the lever being so balanced that any coin lighter than the genuine will not be heavy enough to depress it: so that all spurious coin whether too large or too light will stop in the gage, while the genuine will slip through and fall out below substantially as described.

GIDEON B. SMITH.

Witnesses:
B. T. F. DULANY,
EDWD. G. STARR.

UNITED STATES PATENT OFFICE.

CHARLES A. HEYER, OF ST. JOHNSBURY, VERMONT, ASSIGNOR TO THE E. & T. FAIRBANKS & COMPANY, OF SAME PLACE.

WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 534,829, dated February 26, 1895.

Application filed November 13, 1894. Serial No. 528,671. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. HEYER, a citizen of the United States, residing at St. Johnsbury, in the county of Caledonia, State of Vermont, have invented certain new and useful Improvements in Weighing-Scales, of which the following is a description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in weighing scales and especially to means for balancing the scale without a load, devices for this purpose being ordinarily known as balance balls.

It is customary to provide the short arm of the beams of certain classes of scale with an adjustable ball to properly balance it, but it is well known that considerable inconvenience sometimes arises from persons thoughtlessly rotating the ball or balance, or, it may be, some shock will cause it to be accidentally displaced. To overcome this objection, it has heretofore been proposed either to use a friction or to provide a set screw, or a check or jam nut for the ball. The friction method is open to the objection that, if sufficient to secure the ball against jarring and thoughtless handling, it will be inconveniently hard to work in balancing the scale, while, in the use of a set screw or a check or jam nut, additional parts, as well as tools, are required to enable them to be operated.

The object of my invention is to provide a simple and effective device whereby the balance ball of a weighing scale may be held in any desired position along its line of travel, with such pressure as to prevent displacement under a jar or shock, or under any careless handling of the ball itself. At the same time, however, the device is so constructed that, by the exercise of sufficient force, it may be disengaged from one point and secured at another without requiring the use of tools or appliances external

My invention com

pression or distention of the flexible part, cause it to bind upon the support, which the ball traverses, the relation of the parts being such that, under a certain degree of tension between the solid and the flexible parts, they will all move together as one mass, the flexible part serving to unite them, while the tension is not sufficient to prevent their being readily moved along the shaft, so that the ball may be quickly adjusted to a proper position to balance the scale; but, when the ball has been moved to its proper position, bringing the parts still closer together, will cause a strong binding pressure, thus preventing any movement of the ball.

Secondly, it consists of the two outer parts movable along a suitable support, and a flexible central member also arranged on said support adapted to unite the two outer members and, under pressure, to hold them rigidly in position on their support.

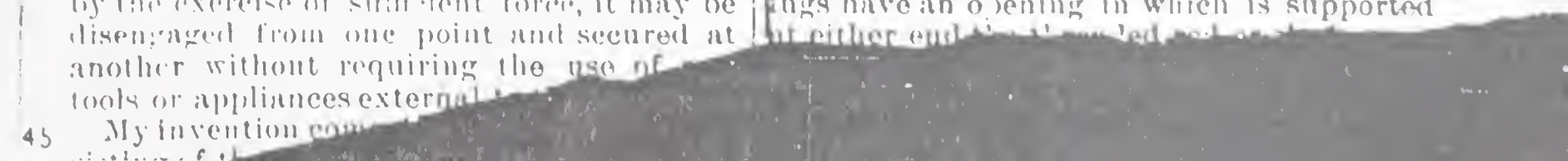
Finally, the invention consists in the matters hereinafter described and referred to in the appended claims.

In the accompanying drawings, which illustrate the invention, Figure 1 represents my invention as applied to a scale, a sufficient portion of the latter being shown to enable my invention to be readily understood. Fig. 2 is an enlarged view in elevation of my invention; and Fig. 3 is a sectional view.

In the drawings, A represents a portion of the framework of a scale.

B is the two-part beam, of usual construction, provided with the sliding poises, the beam being pivoted on the standard C and having hung from the knife edge pivot *f* the loop *g* upon which is hung the steelyard rod *h*.

My balancing device for the beam comprises the lugs *d* secured on the beam B. These lugs have an opening in which is supported



(No Model.)

C. A. HEYER.

WEIGHING SCALE.

No. 534,829. Patented Feb. 26, 1895.

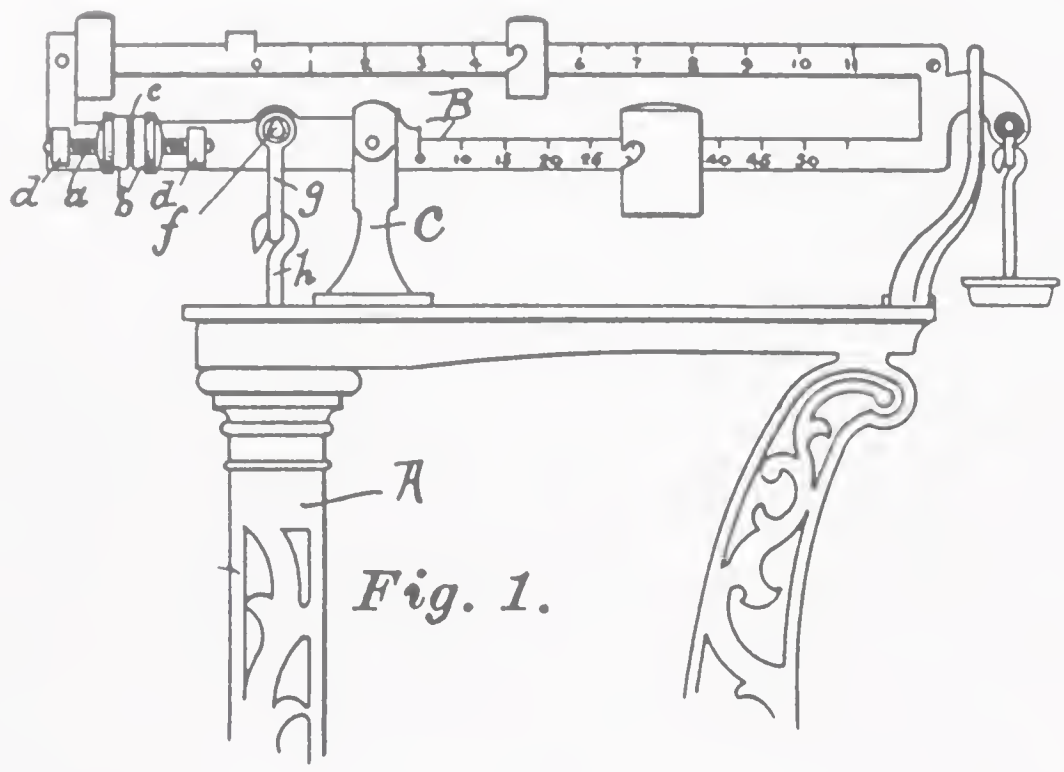


Fig. 1.

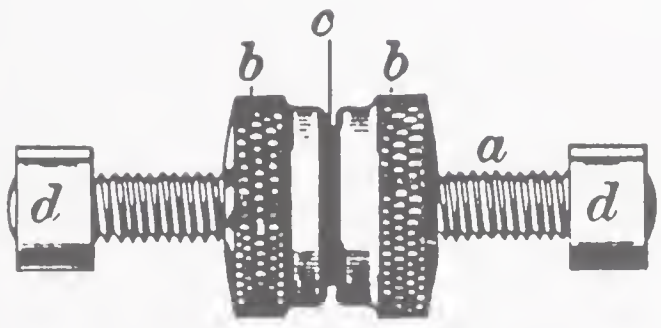


Fig. 2.

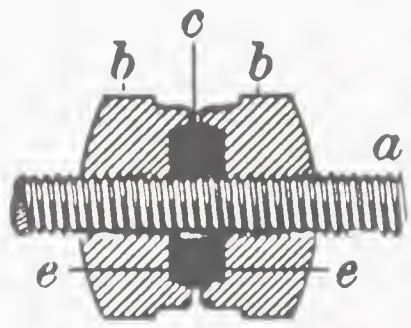


Fig. 3.

WITNESSES:

Gales P. Moore

Edgar Brandenburg

INVENTOR

Charles A. Heyer

BY Chas. L. Stinton

ATTORNEY

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It will be seen that, as the nuts are screwed together, the bottoms of the recesses will press against the opposing sides of the flexible disk, which pressure increases the diameter of the disk and causes it to bind against the outer wall of the recess in both nuts, so that they are bound together and may be adjusted as one nut to the desired position on the shaft *a*. Increased pressure on the faces of the disk will also distend it against the shaft on which it is mounted causing it to grip the same and bind with greater or less force, as the nuts are screwed up or unscrewed, so that when the nuts have been adjusted to the proper point of balance on the shaft they may be clamped thereon securely against any careless handling.

I have found in practice that good results may be secured if the central opening in the disk be very large, so that there is no contact of said disk with the shaft, for, even under such circumstances, the pressure between the nuts will cause them to bind to a considerable extent on their threads, so that the ball will be quite firmly clamped in position.

The ball, as a whole, is easily adjusted to any desired position along the shaft and readily clamped securely. There are no screws to get lost, no wrenches or screw-drivers needed and no liability of the ball getting loose by accident.

It will be understood that, in its broadest sense, I do not desire to be limited to the precise details of construction herein shown, as various modifications and changes may be made without departing from the spirit of my invention. For example, the shaft, upon which the parts are mounted, may be smooth, and the thread to draw the nuts together, be on the nuts themselves. Again, when distended, the flexible portion of the device may be made to bind upon some fixed part external to the ball, instead of upon the shaft upon which the ball moves. Again, the ball might be composed of a greater number of parts from what I have herein shown. The flexible part of the device may be replaced at small expense in event of becoming worn.

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comprising a plurality of members arranged respectively on the same support, one of said members being flexible and adapted to be brought under pressure between two other members, whereby it clamps the device upon its support; substantially as described.

2. In combination with a suitable support, the two outer parts movable on the same, and a flexible member encircling the support and arranged between the two outer members adapted, under compression of the two outer members, to unite them so they may be moved as one and under additional pressure to bind them firmly on the support; substantially as described.

3. The herein described binding device, comprising a supporting rod or shaft, balls or nuts movable on said shaft or rod and having recesses arranged adjacent to each other, a flexible disk or ring arranged on said shaft between the two nuts or balls and adapted, when the latter are moved into engagement, to pass into the recesses and bind against the walls thereof; substantially as described.

4. The herein described binding device, comprising a supporting rod or shaft, balls or nuts movable on said shaft or rod and having recesses arranged adjacent to each other, a flexible disk or ring arranged on said shaft between the two nuts or balls and adapted, when the latter are moved into engagement, to pass into the recesses and bind against the walls thereof, said binding member being of greater thickness than the socket formed by the recesses of the balls; substantially as described.

5. In combination with the scale beams having the lugs *d*, *d* secured thereto, the screw threaded rod or shaft *a*, supported by said lugs, the cylindrical balls *b*, movable on said shaft and provided with recesses, *e*, *e*, a flexible member *c* located on said shaft between the balls and adapted in the movement of the latter toward each other to be crowded into the recesses and bind against the walls thereof and also against the shaft *a*; substantially as described.

6. A balancing device for scales and the like comprising two independent members movable toward and from each other and arranged on a suitable support, and a flexible member arranged between the two, and means for causing the same to bind against the other members and against their support; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES A. HEYER.

UNITED STATES PATENT OFFICE.

CHARLES A. HEYER, OF ST. JOHNSBURY, VERMONT, ASSIGNOR TO THE E. & T. FAIRBANKS & COMPANY, OF SAME PLACE.

WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 534,829, dated February 26, 1895.

Application filed November 13, 1894. Serial No. 528,671. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. HEYER, a citizen of the United States, residing at St. Johnsbury, in the county of Caledonia, State of Vermont, have invented certain new and useful Improvements in Weighing-Scales, of which the following is a description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in weighing scales and especially to means for balancing the scale without a load, devices for this purpose being ordinarily known as balance balls.

It is customary to provide the short arm of the beams of certain classes of scale with an adjustable ball to properly balance it, but it is well known that considerable inconvenience sometimes arises from persons thoughtlessly rotating the ball or balance, or, it may be, some shock will cause it to be accidentally displaced. To overcome this objection, it has heretofore been proposed either to use a friction or to provide a set screw, or a check or jam nut for the ball. The friction method is open to the objection that, if sufficient to secure the ball against jarring and thoughtless handling, it will be inconveniently hard to work in balancing the scale, while, in the use of a set screw or a check or jam nut, additional parts, as well as tools, are required to enable them to be operated.

The object of my invention is to provide a simple and effective device whereby the balance ball of a weighing scale may be held in any desired position along its line of travel, with such pressure as to prevent displacement under a jar or shock, or under any careless handling of the ball itself. At the same time, however, the device is so constructed that, by the exercise of sufficient force, it may be disengaged from one point and secured at another without requiring the use of tools or appliances external

My invention con
sisting of

pression or distention of the flexible part, cause it to bind upon the support, which the ball traverses, the relation of the parts being such that, under a certain degree of tension between the solid and the flexible parts, they will all move together as one mass, the flexible part serving to unite them, while the tension is not sufficient to prevent their being readily moved along the shaft, so that the ball may be quickly adjusted to a proper position to balance the scale; but, when the ball has been moved to its proper position, bringing the parts still closer together, will cause a strong binding pressure, thus preventing any movement of the ball.

Secondly, it consists of the two outer parts movable along a suitable support, and a flexible central member also arranged on said support adapted to unite the two outer members and, under pressure, to hold them rigidly in position on their support.

Finally, the invention consists in the matters hereinafter described and referred to in the appended claims.

In the accompanying drawings, which illustrate the invention, Figure 1 represents my invention as applied to a scale, a sufficient portion of the latter being shown to enable my invention to be readily understood. Fig. 2 is an enlarged view in elevation of my invention; and Fig. 3 is a sectional view.

In the drawings, A represents a portion of the framework of a scale.

B is the two-part beam, of usual construction, provided with the sliding poises, the beam being pivoted on the standard C and having hung from the knife edge pivot *f* the loop *g* upon which is hung the steelyard rod *h*.

My balancing device for the beam comprises the lugs *d* secured on the beam B. These lugs have an opening in which is supported

at either end

(No Model.)

C. A. HEYER.

WEIGHING SCALE.

No. 534,829. Patented Feb. 26, 1895.

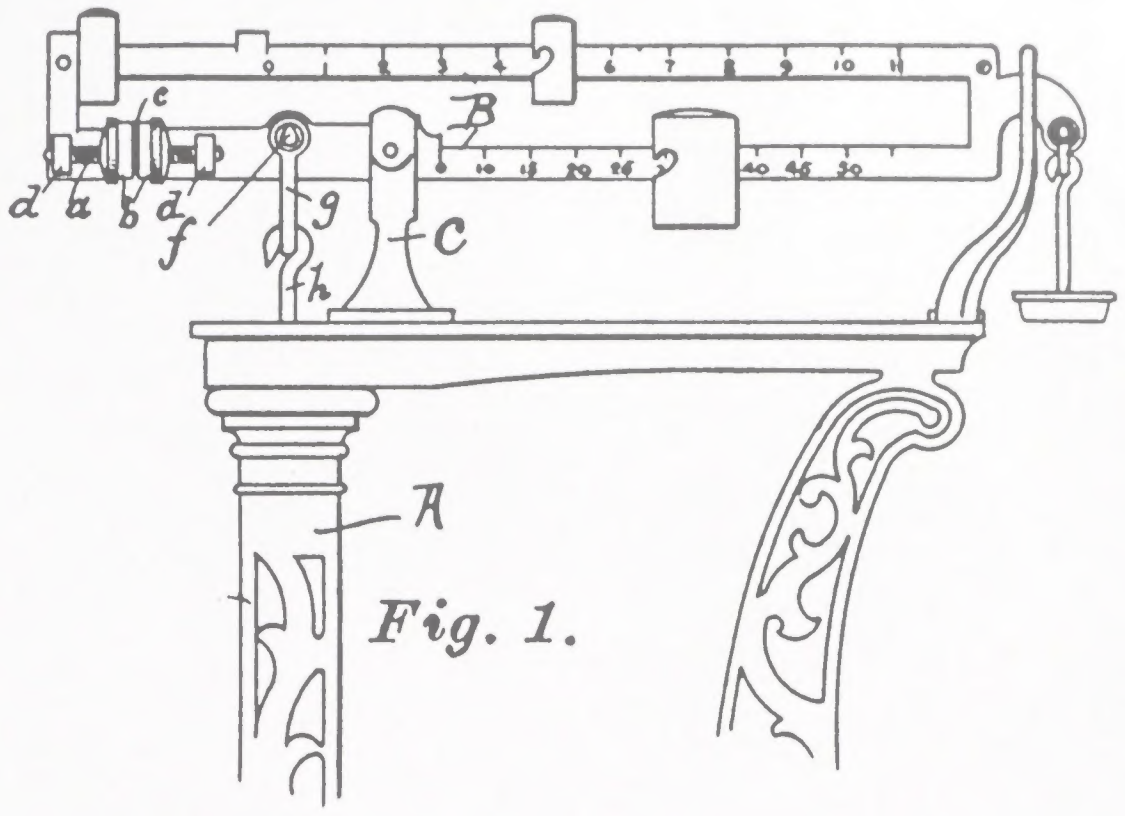


Fig. 1.

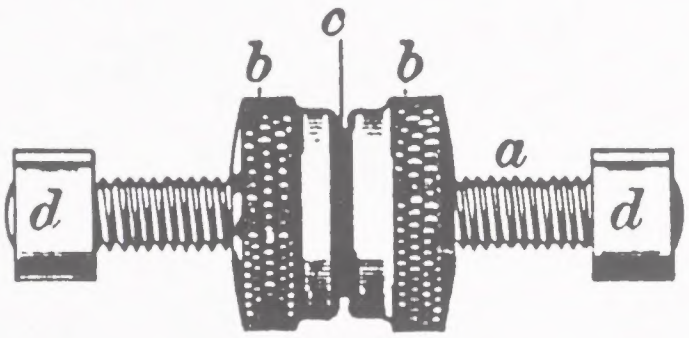
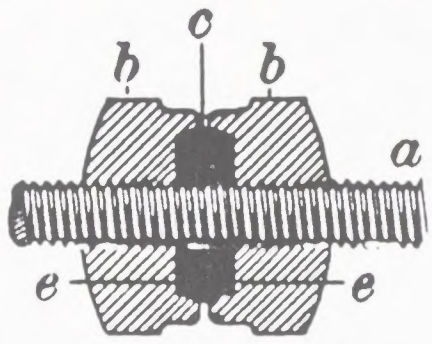


Fig. 2.



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In testimony whereof I affix my signature in presence of two witnesses.

CHARLES A. HEYER.

1999 Bass sale by Bowers (draft)

Baker-91. Silver. Plain edge (2). Proof-63, and EF-45. TIME INCREASES HIS FAME ~ B-155A. Silver or silvered bronze, later striking, antiqued finish. Plain edge. MS-60. Paquet's Mint Series. ~ B-245A. Silver. Plain edge. Proof-63. Paquet's Mint Series. Washington obverse, Lincoln reverse. Deeply toned, dark oxidation before Lincoln's portrait ~ B-279. Bronze. Plain edge. 2 pieces, EF to AU, both later strikings (in our opinion). U.S. MINT OATH OF ALLEGIANCE ~ B-324. Bronze. Reeded edge. Proof-55. Battle Monument, Baltimore (a.k.a. the *Monumental City* for this and other art). Dies by R. Lovett, Jr. ~ B-436A. George H. Lovett and Isaac F. Wood collaboration. Bronze. Plain edge. *Shattered obverse die,* and quite interesting as such. Proof-63. The Washington Elm ~ B-438. Lovett and Woods. White Metal. Plain edge. Proof-65. ASSUMED COMMAND. A superb gem specimen ~ Adoption of the Constitution medal. Silver. Plain edge. Antiqued finish. Washington to right, SESQUICENTENNIAL CELEBRATION arcs above, ADOPTION OF THE CONSTITUTION curves below on obverse, reverse with 150TH ANNIVERSARY CELEBRATION arcs above, 1787-1937 below, eagle on book with WE THE PEOPLE in cartouche at center. A nice group overall. (Total: 10 pieces)

2169 [16221-i] Washington medals and a Franklin medal: ~

Washington, 1797. Reich's Sansom Medal Mint copy. Baker-72. Copper, bronzed. Plain edge. Proof-63 BN ~ Store card of R. Lovett, Jr. Die Sinker. Baker-556, PA-339. Brass. AU-50. Equestrian Washington obverse, Lovett's advertising reverse ~ Benjamin Franklin medal by Dupré. Paris Mint restrike. BRONZE on edge. Struck from original dies. AU-50. (Total: 3 pieces)

From New Netherlands Coin Company's sale of April 1972, Lot 619.

Diverse Tokens and Medals and Other Numismatic Items

By their very nature, tokens and medals are diverse. Below are many interesting medals, loosely arranged by alphabetical subject. However, as the topics are many, and some groups contain multiples, we advise that you check the entire listing.

2170 [23040] Allender counterfeit-detecting gold coin scale, circa 1851-3:

J. Allender's Gold Coin scale, *patent pending,* manufactured by I. Wilson, New London Conn. A superb, like-new example of this popular coin scale type, with full "lustre," if you will, on its bright brass surfaces. A treasure unto itself, as it is housed in the bottom (alas, no top) of its original box, with the original label containing operating instructions *and* the original counterweight. Best of all, the paper and cardboard components are as nicely preserved as the actual scale!

This is a relatively early entry in what would prove to be an extensive series of scales with different imprints and configurations invented by Allender.

This and related Allender scales are described in fascinating detail on many pages (especially p. IV-1-2 for this particular model) in the new book, *U.S. Coin Scales and Counterfeit Coin Detectors, by* Eric P. Newman and A. George Mallis.

2171 [17958-ccc] 1897 Bickford dollar. HK-834. MS-63.

Aluminum with brass central insert. Plain edge. 58.9 grains; 28.0 mm. Obverse with HERE IS SHOWN THE VALUE OF OUR DOLLAR IN THE COIN OF DIFFERENT NATIONS OF THE WORLD around a circle, international coinage ratios in smaller circles around another circle, INVENTED AND PROTECTED BY DANA BICKFORD within that circle around brass insert, insert marked REPUBLICAN INTERNAT'L DOLLAR, reverse with THIS COMBINATION COIN WILL WHEN ADOPTED BE GOOD IN ALL NATIONS/HEAL ALL DIFFERENCES BETWEEN GOLD AND SILVER MEN/AND FULLY SETTLE ALL FINANCIAL QUESTIONS/APPROVED BY ALL GOOD BUSINESS MEN in decreasing circles around the brass insert, same markings on this side of the insert as on the obverse.

Notes concerning Bickford are found in Session II under the 1874 Bickford pattern $10 gold.

2172 [16272-55] California souvenir. Circa 1949, but dated "1855." Round brass "slug," a souvenir modeled after the Wass-Molitor $50 round pieces of the 1855 era. Rich olive gold toning on both sides.

Liberty to left on obverse, 13 stars around, date below, reverse with SAN FRANCISCO CALIFORNIA FIFTY around an eagle styled after the Wass-Molitor reverse, wings spread, shield and arrows in talon, ribbon in beak. On a ribbon above the eagle appears 1809 GRS and 887 THOUS. Somewhat prooflike on both sides.

Purchased from Julian Leidman, May 30, 1972.

Photo 1X

2173 [17857] 1917 Catskill Aqueduct medal by Daniel Chester French. Medallic Art Co. New York. Johnson-29. Silver. Round. 3,584.4 grains; 75.8 mm. Essentially as struck. Matte-like steel gray and silver surfaces.

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